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IN MEMORIAM—HENRY LAURIE.

By One of His Students.

IT is fitting that in the first number of the first Australasian philosophical journal, reference should be made to the first Professor of Philosophy in an Australian University, a teacher and thinker who played an important part in the Australasian philosophical community, and whom death has recently removed from its membership. Dr. Henry Laurie was a graduate of the University of Edinburgh, having pursued his course in philosophy under Professor Campbell Fraser, who, in conversation with the writer, referred to him and Andrew Seth (now A. S. Pringle-Pattison), as two of the most remarkable students who had passed through his hands. After graduating he hesitated between Literature and Philosophy. For a time Literature claimed him, and the first years of his life in Australia were devoted to journalism. However, in the year 1883, a lectureship in Logic and Philosophy was established in the University of Melbourne, and he was appointed to this position. Under his control the work of the department steadily developed, so that in due time a professorship was created, and Dr. Laurie became the first occupant of the Chair. He held this post until the end of 1911, when, owing to failing health, he retired. Up to the time of his death last year his interest in matters philosophical was unabated.

The conditions in most, if not all, Australasian universities, are such that a professor spends most of his energy in the work of teaching. His research finds its medium of expression mainly in his lectures, and he influences the thought of the community chiefly through the minds of his students. It is as a teacher that the majority of Professor Laurie's students will remember him. His lectures bore the mark of most thorough preparation. They were written in full, and assumed the form of highly finished literary essays. The main impression, which as a teacher, he produced on the minds of his students was that of the fairness and soundness of his judgment. He spared no pains in making clear the philosophical position with which he was dealing, and having set it forth in detail, he then proceeded to criticism which one generally felt went to the centre of the problem. His treatment of Kant's Critique of Pure Reason along these lines remains in my mind as an example of philosophical teaching at its best.

No one could have passed through his courses without being influenced by the obvious desire, even anxiety, of the Professor to do justice to the thought of the thinkers with whom he dealt, and to make it clear and distinct. His own point of view was not obtruded, but through the criticism in which he excelled, a constructive position emerged. It would be difficult to label that position. Perhaps it is to be seen in its developed form in Professor Pringle-Pattison's first series of Gifford Lectures. Shortly before his death, he told me that this book represented in the main his own position. What one might term his Ethical Idealism, finds its clearest expression in two published lectures—one on Materialism, the other on Immortality. His power lay, however, not so much in winning his students to a certain school of thought, as in communicating to them an attitude of mind in which the thought of any school might be approached.

Though his main energy was directed to his teaching, Professor Laurie found time to write for the wider philosophical community. His largest work is his book on Scottish Philosophy, but some of his shorter publications, in the opinion of the present writer, reveal his power more fully. For example, his article in Mind, dealing with Mill's Canons of Induction, shows a rare capacity for analysis and incisive criticism, while the two published lectures to which reference has already been made disclose to the reader the insight which, ultimately, controlled all his philosophical thinking. His last published work was a lecture delivered about two years ago to the Victorian Classical Association, entitled, "The Influence of Plato in English Literature." This illustrates well the combination in a high degree of literary with philosophic power which he possessed.

In this short sketch no reference has been made to Professor Laurie's personal qualities. Shy by nature and reserved, he did not easily make friends, but to those who enjoyed the privilege of his friendship he revealed rare qualities of fine feeling and unfailing loyalty.

J.Mc.K.S.

THE EVOLUTION OF FEELING.

By

CHARLES S. MYERS, M.A., M.D., Sc,D., F.R.S., late Director of Psychological Laboratory, University of Cambridge.

IN the lowest organisms two forms of affect* are early recognisable—"ipsi-affect," colouring self awareness, and "actu-affect," colouring self-activity. The ipsi-affects express the relation of the primitive self to organic movements; the actu-affects express its relation to locomotive activity.

When such a simple organism finds itself in a favourable environment, one of two results may occur. A condition of enhanced organic vitality may ensue, developing the ipsi-affect of *exhilaration.* Or a condition of rest may ensue, developing the ipsi-affect of *ease.* In both cases there arises a certain harmony of organic processes. In the one it is at a high level, and the contractile substance, by means of which the locomotion of the organism is carried out, undergoes strain or contraction; whereas in the other the organic harmony is at low level and the contractile substance undergoes relaxation. In consequence an actu-affect, one of increased or diminished self-activity towards outward movement develops, directed in the one case to appetition and becoming (attractive) *interest,* and in the other directed to the avoidance of change and becoming *contentment.*

So, too, when such an organism finds itself in an unfavourable environment, an external reaction of strain or of relaxation may result. In the former case the condition is one of unrest, and the ipsi-affect is one of *uneasiness*; in the latter case the condition is one of reduced vitality, and the ipsi-affect is one of *depression.* In both cases an internal discord or disorder of organic processes occurs, that discord being at a high level when the locomotor substance of the organism is in a state of strain, and at a low level when it is in a state of relaxation. With the progress of mental evolution there will be experienced in the one case a feeling of increased self-activity towards outward movement, directed to aversion, i.e., an actu-affect of *repugnance,* in the other case a feeling of relaxed self-activity, directed to the avoidance of change, i.e., an actu-affect of *apathy.*

We see, then, that alike when the environment is favourable and when it is unfavourable, an increased or a decreased tendency to outward movement may occur. The state of strain comes to be characterized by an ipsi-affect of exhilaration or uneasiness, according as the environment is favourable or unfavourable, i.e., as the organic state is one of high-level harmony or discord. Similarly the state of relaxation comes to be characterized by an ipsi-affect of ease or depression, according as the organic state is one of low-level harmony or discord.

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*"Affect" is a word which has come to be used in recent psychological discussion with a technical meaning, namely, in the sense of "feeling."—Ed.]

Let us call these four main conditions, under which ipsi- and actu-affects arise, $S +$, $R +$, $S -$, $R -$, using S and R for strain and relaxation, and + and — according as the environment is favourable or unfavourable. Then we may express their relations by the following:—

FAVOURABLE ENVIRONMENT.

Strain ($S+$)	Enhanced Vitality,	Exhilaration (Gladness),	Interest
Relaxation ($R+$)	Rest,	**Ease** (Bliss),	Contentment

UNFAVOURABLE ENVIRONMENT.

Strain ($S-$)	Unrest,	Uneasiness (Distress),	Repugnance
Relaxation ($R-$)	Reduced Vitality,	Depression (Sadness),	Apathy

It is clear that the state of relaxation before a favourable situation, evoking $R +$, finds its antagonist in the state of strain before an unfavourable situation, which evokes $S -$. The relaxed state before a favourable situation implies a contentment which continues so long as the situation remains favourable. It is recognisable in ourselves in passive sensuality and in day-dreaming; it is characterized by a total disregard of the future, by the complete absence of desire to initiate bodily activity. The ipsi-affect of ease, becomes raised to a mental state which we are wont to term *bliss*. Contrast now the antagonistic state of uneasiness, $S -$, which is characterized by active withdrawal from the unfavourable environment until the latter becomes favourable. As the state of ease is marked by an absence of outwardly directed activity, so the state of uneasiness is characterized by its presence—in the form which we have come to recognise as the impulse of aversion. As the consciousness primarily resulting from general organic discord becomes more and more developed, this ipsi-affect of uneasiness gives rise to the mental state known to us as *distress*. The reaction of withdrawal becomes linked with impulses to restore the favourable environment, i.e., it is ultimately connected with desire for change in order to secure that environment, the desire arising from the obstruction offered to those impulses. This behaviour of withdrawal may, I venture to suggest, even take the form of a contraction of synaptic processes in the higher nervous system, preventing the integration, the actual experience by the self, of the discordant situation or idea, and thus producing the phenomenon known as "dissociation" by a process of active disintegration.

From the standpoint of neuro-muscular function, the state of strain, when the organism is confronted with an unfavourable situation (S —), finds its antagonistic state in one of relaxation attained when the environment is favourable (R +). But from the standpoint of the behaviour of the organism in response to its environment, the complement to aversion is the process of appetition, which is exhibited in the state of strain toward a favourable environment (S +). In this state of appetitive strain we can recognise the possibilities of a development towards conditions specially favourable to synaptic functioning, in which association of the experience is facilitated instead of, as in aversion, being inhibited. The organism comes to feel a desire to seek and act upon, not to withdraw from, the situation or the object. Meanwhile the ipsi-affect of exhilaration connected with the high-level activity of organic harmony evolves into the mental state of *gladness*. On the other hand, the functional antagonist to this S + is R—, in which the organism, as it were, "gives up the ghost," succumbs to reduced vitality, inertly maintaining this condition. Instead of leading to a state of gladness, the ipsi-affect of depression gives rise, in the course of evolution, to the mental state of *sadness*. It is conceivable that just as the active form of response to an unfavourable environment (S —), may produce an active disintegration by synaptic withdrawal, so the devitalising character of the relaxation response to an unfavourable environment (R —) may produce passive inhibition or synaptic blocking—an exaggerated refractoriness due to lowered vitality of the nervous system.

We have thus been able to recognise in the behaviour of primitive organisms to their environment certain accompanying shades of affect, toning the awareness of self and self-activity, which in their further evolution may conceivably give rise, on the ipsi-affective side, to the psychological antitheses of gladness and sadness, bliss and distress, and on the actu-affective side to interest, repugnance, contentment and apathy. Bliss and sadness imply relaxation; gladness and distress imply strain; while interest and repugnance imply strain; and contentment and apathy imply relaxation.

I venture to think that such a classification will help us to group the various feelings which have been evolved with the increasing complexity of consciousness. It is clear that the relaxed state in which the organism bathes or wallows in its situation (R + and R —) is consonant with the developing feelings of happiness, security, passive ecstasy, phantasy on the one hand, and of quiet melancholy, grief, despair on the other. It is not less obvious that the process of active strain (S + and S —) is capable of leading, on the side of appetition and interest to the feelings of hope, expectation, curiosity, familiarity, and when conjoined with gladness to the feelings of joy, lust, affection, anger, confidence, certainty and coming success; whereas on the side of aversion and repugnance we can range the feelings of disgust, loathing, contempt, scorn, dislike, strangeness, bashfulness and surprise, and starting from distress gain those of sorrow, fear, anxiety, disappointment, uncertainty, threatened failure, doubt and diffidence. In certain feelings we can discern a conflict between members of these different classes; thus in wonder a conflict between the S + of curiosity and the S — of surprise, or in jealousy a conflict between the S + of anger and the S — of fear. No simultaneous conflict within any single feeling seems possible between the R + and R — affects.

Within the limits of this paper, it will be impossible to present more than the briefest outline of the way in which I conceive the evolution of such feelings to have taken place. We may reasonably conclude that the development of the actu-affects which become in ourselves contentment, apathy, interest or repugnance is of secondary importance, relatively to the ipsi-affective form recognised in ourselves as bliss, sadness, gladness or distress, which is asociated with harmony or discord of organic processes at high or low level. This conclusion is, however, by no means identical with Freud's view that a later reality principle can be contrasted with an earlier pleasure principle. Bliss and gladness, sadness and distress, occur in the R and in the S conditions. They arise in relation to the state of the entire organism—how the self is affected by the environment, whether it suffers ease or exhilaration or uneasiness or depression. The ipsi-affect of exhilaration cannot be considered as later than that of ease, although, doubtless, it takes a more prominent part in the course of evolution and development. Probably ease is the more common form of the primitive ipsi-affect experienced *in utero*; but even in the earliest infantile life the more active form plays an important part, e.g., in seeking the mother's breast and in otherwise bringing the organism into relation with the external world. It seems absurd to suppose that in infant life the reality principle is totally absent. On the other hand, the S form of negative affect is essentially primitive, the R form involving the organism in danger and being indeed a likely precursor or at least a warning of approaching death.

Thus, with the progress of mental and bodily evolution a generalised form or pattern of visceral and somatic reaction, innately directed to some purposive end, becomes associated with a definite kind of ipsi and actu-affect. The affect comes largely to be the "meaning" of the reaction to the self. That meaning arises when there is undue obstruction to or facilitation of the passage of the environmental stimulus over into the reaction. owing to higher control or to higher maintenance of the reaction. When the passage occurs immediately without this higher interference, there is no affect, except such as may arise from the organic consequences of the reaction, which always amplify and complete the vague meaning experienced at the moment when the first performance is being initiated.

Consequently the particular feeling that develops is by no means wholly dependent on the particular visceral or somatic expression. Its character or meaning depends rather on the general character of the situation that confronts the subject and on the general purpose of the reaction. Thus, too, the greater the higher control over visceral and somatic expression, the more profound becomes the feeling experienced; while a certain reduction of that control may develop an intenser feeling owing to the greater contribution thereupon made through the effects of the expression. We may indeed distinguish two kinds of ipsi-affect, the pre-expressive and the post-expressive. And we may conclude that no feeling is ever completely experienced for the first time until its expression has occurred, and that on subsequent occasions, it arrives at relative maturity without needing such post-expressive contribution.

How these affects develop into the higher feelings can only be vaguely outlined here. The actu-affect develops into a variety of "attitudes," cognitive and volitional, characterized by very generalized forms of response. Broadly different kinds or qualities of acts, whether of the self or affecting the self, come to acquire specific feelings of attitude. Thus, looking at the future, based on past experience, brings a feeling of expectation. The receipt of experience consonant with or contrary to past experience brings a feeling of familiarity or strangeness. Ease or difficulty of decision brings a feeling of certainty or doubt. The facilitation or obstruction offered to the attainment by the self of its ends gives rise to the feeling of confidence or diffidence in a given direction. The valuation of the self in relation to other selves evolves the feeling of superiority or inferiority. Interest in or repugnance to the new evolves the feeling of curiosity or its converse.

At the higher intellectual level, the ipsi-affects of ease and depression pass into happiness and unhappiness of the self. They were relatively devoid of appetition or aversion. On the other hand, the ipsi-affects of exhilaration and uneasiness, which are intimately associated with the self-activity involved in interest in and repugnance towards external objects, ultimately yield those feeling tones of pleasure and displeasure that come to be objectively applied as qualities of sensations, objects and ideas. When through cortical lesions objects are no longer describable as pleasant or unpleasant, there remain merely the self-experiences of gladness, distress, etc. Conduct comes to be determined by the subject's now higly complex "character," which is in turn largely founded on the "values" of objects and ideas. These values depend on the "sentiments" formed in connexion with objects and ideas.

The sentiments arise through the innate organization of tendencies to emotions and instincts about objects and ideas. *Pari passu* with this organization two new feelings, the "sentiment feelings," make their appearance, those of "like" and "dislike," based on the affective tone of interest and repugnance. They are partly innate (*cf.* parental affection) and partly acquired (*cf.* filial and social affection). They prompt one or another of a system of emotion feelings and acts or of instinct feelings and acts according to the situation in which the object or idea is experienced. In consequence of such feelings evoked through the activity of the sentiment systems, the original sentiment feeling, beginning as little more than interest or repugnance develops into like or dislike of some object and hence into regard, respect, affection, love, devotion, hate, contempt, etc.; while within these sentiment feelings the emotion feelings and instinct feelings acquire spcial forms ,such as jealousy, envy, ambition, pride, vanity, etc. Thus the sentiment starts with a vague specific feeling and grows by the emotional or instinctive experiences which it prompts.

Each emotion feeling similarly has a specific feeling based on the affect aroused through the organization of the emotion system about a series of instincts and higher reflexes, and it grows through the various instinct and reflex feelings which it prompts. But like the sentiment feeling, the specific feeling of each emotion is independent of the kind of more elementary response that it evokes. Each emotion arises as an integration of various instincts and higher reflexes, just as each sentiment arises as an integration of various emotions and instincts. Thus in response to a situation of danger, which can be solved by escape or defence, any one of the instincts and higher reflexes, (i) of flight, (ii) of seeking protection by concealment, by clinging to the parent, or by rigid or relaxed immobility, (iii) of fighting at bay, may occur. By virtue of such organization of instincts and higher reflexes, the affect of distress becomes raised to the emotion feeling of "fear." So, too, in response to an object which demands rejection, the acts of shrinking, shuddering, cleansing the skin, averting the head or eyes, vomiting and the attenuated forms of nausea, choking, spitting, etc., may, any one of them, occur. The affect of repugnance is raised to a higher power, to the emotion feeling of "disgust."

On the first occasion of its appearance, the emotion feeling, like the sentiment feeling, is doubtless extremely vague and ill-formed. Just as the sentiment feeling of love comes to maturity through the emotional responses of fear, anger, and the affects of joy, distress, etc., so the emotion feeling develops through the instinctive responses and the shades of affect thereby evoked. The special character of the emotion feeling obviously does not depend appreciably on the nature of the particular instinct evoked. The latter will differ according to the result of the conflict between the various alternative instincts integrated within the emotional system, and according to other conditions which determine, for example, whether an individual shall become red or white with anger, whether his skin shall sweat or be dry in fear, whether his heart-beat shall quicken or slow, his blood pressure rise or fall, during the activity of any one emotional system. The special emotion feeling is dependent rather on the general character of the situation which confronts the subject, and on the common purpose of the alternative instinctive reactions. Fear and disgust, for instance, are typically connected with escape and rejection, anger and lust with hostile attack and sexual possession, respectively. Into each pair the original affect enters, of distress or repugnance in the one, of gladness or interest in the other.

So at length we reach the instincts which we have discovered integrated within any given emotion. Clearly, the same instinct or higher reflex may be integrated within more than one emotion, although (as we observed in the case of emotions integrated within the sentiment) generally its character and reaction become modified in the process. Thus the instinct of self-display, with its special instinct feeling, is common both to anger and to the sexual emotion; fighting is common to fear (fighting at bay) and anger; crying is common to extreme joy and sorrow. The emotion, like the sentiment, also comes to contain not only an opposition of elements but a succession of elements. Each instinct has its own instinctive feeling, based on its affect of gladness, interest, repugnance, etc. So far as they occur in separation from the emotion systems, the individual instincts contain within them the rudiments of intelligent activity. They are, to a certain extent, variable, plastic and modifiable by experience. They, in turn, are composed of differently integrated antagonistic and successive responses, those of the higher and lower reflex systems. On the first occasion of its experience each instinct develops its own peculiar innate instinct feeling, determined by the tendency to act so long as to secure a certain end. Like the emotion feeling, the instinct feeling depends for its full development on the experience resulting from the act. But, when by a single experience an instinct feeling or an emotion feeling or a sentiment feeling has incorporated the feelings arising from its expression in activity, it does not need on a second occasion to await the slow process of expression before it can be experienced in its now more fully developed form.*

And so finally we reach once more the reactions of the most primitive organism itself, where the affect, corresponding to our gladness, sadness, bliss, distress, interest, repugnance, contentment, apathy, arises not through the special kind of organic or bodily response, but is the psychical equivalent of the innate general purpose, the control of the organic and bodily activity in relation to the environment, and receives additional feeling as a consequence of that activity. This condition is exemplified in our higher reflexes (e.g., vomiting, sneezing, etc.) which are partly under self-control. The stimulus evokes a condition of organic discord (or harmony), which, owing to the integration within the system of the reflex, of certain controllable actions, and in virtue of their results, develops an affect of distress (or gladness), etc. The lower reflexes (e.g., erection of hairs) which are wholly beyond control and never occur through any conscious impulse, only affect the self by the organic sensations they evoke through the reaction. These produce a state of organic harmony or discord—the most primitive and the most fundamental equivalent of affect we are able to trace.

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*Hence an emotion *once experienced,* can conceivably be re-experienced by an animal almost wholly deprived of organic and bodily sensibility *(Cf.* Sherrington, *Proc. P.S.,* 1910, lxvi. 390-403).

Summary.—(1) Four varieties of primitive affect are distinguishable. characterised by (a) strain, and (b) relaxation in response to a favourable situation, and by (c) strain, and (d) relaxation in response to one unfavourable. Exhilaration, gladness and interest arise from (a); ease, bliss and contentment from (b); uneasiness, distress and repugnance from (c), depression, sadness and apathy from (d).

(2) These affects are due to (i) the organic harmony or discord induced by the environment; wherewith are evoked (ii) innately purposive patterns of out-going locomotor and organic activity, partly self-controlled and producing organic sensations; the latter again induce (iii) organic harmony or discord. Self-activity is "affected" by (i), (ii) and (iii). An innate basis is afforded by (i) and (ii) for the affect, which is completely developed by (iii) derived from actual expression.

(3) Instincts are integrated from different higher and lower reflexes, emotions from different instincts, sentiments from different emotions organized within progressively higher systems and subjected to control and inhibition, which are important determinants of the accompanying feeling. In the lowest reflexes the self is "affected" only by (iii). The higher reflexes are accompanied by the affects evoked as described above in (2). Instincts, emotions and sentiments are accompanied by their special feelings depending on the integration of dispositions to lower feelings and on (ii) and (iii).

THE INFLUENCES WHICH CAUSE FLUCTUATION IN THE PRODUCTION OF INSANITY.

By

SIR JOHN MACPHERSON, M.D., F.R.C.P., Professor of Psychiatry, University of Sydney.

IT is not possible to estimate accurately the prevalence of any hereditary affection in a community because its manifestations are concealed by many different circumstances. For example, in some members of a tainted family it may remain latent, others may suffer from it to such a modified degree as to escape observation, others again may be entirely free from it.

We have learnt from the experience of the Great War several important lessons in this connection. We have seen that a uniform group of powerful emotions can be the exciting cause of both insanity and the neuroses, that no new forms of insanity or of the neuroses have been produced as a result of the war, and that these nervous and mental affections depend in the great majority of cases upon an inborn, temperamental, neurotic disposition—in other words, that they were not caused, but revealed and accelerated by war conditions. The war has demonstrated what Maudsley long ago affirmed, that one and the same cause may originate in neuropathic persons any of the various forms of the neuroses or psychoses, depending upon the particular temperament or idiosyncrasy of the individual. Inimical causes continue to act in so-called times of peace as in times of war, with the result that neuropathic individuals in the general population are constantly liable to develop nervous or mental symptoms, the generic type of which is determined by the subject's predisposition.

It may, therefore, be confidently assumed that in every community there is a potential mass of neurotic and phychopathic individuals any of whom may, when exposed to appropriate stress or strain, develop symptoms of a neurosis or a psychosis depending on his or her particular temperament or idiosyncrasy.

It is also well known that in every community there are individuals suffering from milder forms of insanity, and the neuroses the symptoms of which—often unrecognised—do not call for any special form of care such as isolation.

We are accustomed to judge of the mental health of a community from the published statistics of the registered insane. In the more civilised nations these form a fairly constant proportion, fluctuating—with considerable local variations—around a figure which may be generally stated as 4 per 1000 of the population. That this standard is misleading is now generally recognised, for in States which register mental deficiency as well as insanity, the proportion is at least twice as high. If the neuroses such as epilepsy, hysteria, etc., were included the probability is that the neuropathy and psycopathy of a modern community would extend to from 12 to 15 per 1000, without reckoning the latent tendencies of a further section of the population which it is not possible to estimate.

At present we are limited to a consideration of the published statistics of the registered insane from which, although necessarily limited in their scope to a portion of one form only of mental and nervous instability, we may learn some useful lessons which most probably apply to all forms of nervous and mental diseases.

The popular belief that mental unsoundness is increasing with advancing civilisation, rests upon a very unsubstantial basis. It is so encompassed by fallacies that most authorities refuse to discuss it. Not only are there no statistics upon which such a belief could be based, but those which exist are unreliable. For example, it was officially estimated that in Italy in 1830 there was one insane person in 3785 of the population, and in 1890 one in 1350. That is certainly a marked increase in 60 years, but unfortunately the figures in both instances are hopelessly inaccurate and unreliable. The number of the insane officially known, in Scotland, in 1857, was 3328, or 1.15 per 1000. The figures officially ascertained by a special census in the following year were 7403, or 2.56 per 1000.

It is probable that if the methods for care and treatment prevailing in Scotland fifty years later had existed in 1857, instead of 3000 insane persons there would have been four times that number.

There are more cogent reasons for believing that the variation in mental instability which constitutes registered insanity is a fixed and constant one than for believing that insanity is increasing. While our ethical ideas regarding the care and treatment of mental diseases have greatly changed in the last fifty years, there is no evidence whatever that we have altered in our physical or mental constitution in that time or that we are more exposed to influences which promote the occurence of insanity. The people are more sober, better fed, better clad, and better housed, and although there may be room still for improvement in these respects, yet the relative improvement in every aspect of social life is steadily increasing.

On the other hand, there are undoubtedly variations in the statistics of occuring insanity in different communities.

These variations may be due to many causes. As we have seen, they may depend upon the social and scientific standard of a people and upon their ethical attitude to disease of all kinds. They cannot depend upon an absence of neuropathy or psycopathy, for the theory of variation forbids the possibility of the existence of a community the members of which are at a uniform level of physical or mental endowment, but the recognition of insanity as a disease is a gradual process and older, superstitious notions tend to linger even after the general acceptance of newer ideas. The occurrence of insanity in a family is, rightly or wrongly, apt to be regarded as a reproach or a social disability, and every effort is made to conceal it. These barriers against publicity are slowly breaking down, and both the rich and the poor are less reluctant to acknowledge the existence of insane relations. The effect of such an altered social attitude has a marked effect upon statistics.

There are, however, causes of a more intrinsic nature which produce fluctuations in the statistics of insanity. Chief among these are: (1) The age and sex constitution of a population, and (2) limitations upon sexual selection.

(1) The Age and Sex Constitution of a Community.

Notwithstanding the greater preponderance of females in the population, the number of men who become insane and who are admitted to care will be found over a given period to be in excess of the number of females. In any comparison, therefore, of the statistics of one community with that of another, it is necessary to correct the figures in relation to the proportion of the sexes in each.

When we divide the population of any country with a settled population (i.e., a more or less stable population distributed between urban and rural communities) into the four age periods, 0-20, 20-40, 40-60, and over 60, we find nearly half of the people are under 20 years of age. Yet the number of persons registered as insane under 20 years is only between five and six per cent. of all persons registered.

TABLE I.

Age distribution of population of Scotland (1891), and of the public insane admitted to register (percentages):—

Age Periods.

	0 — 20	20 — 40	40 — 60	60 and over
Population of Scotland ...	45.9	29.4	16.7	7.8
Insane Admissions	5.9	45.9	34.4	13.7

By far the greater number of people—45.9 per cent. of all admissions—become insane between the ages of 20 and 40 years notwithstanding the fact that the population between those ages is considerably less than it is under 20 years. From 60 years the population falls markedly, but the percentage of occuring insanity does not fall in the same proportion, for it is 13.7 per cent. of the whole.

The liability of the aged to insanity is therefore twice as great as that of the young. Consequently the number of people living under the age of 20 and over the age of 60 considerably influences the statistics of occuring insanity.

TABLE II.

Age distribution of population of Scotland (1901)—per cent.:—

	0 — 20	20 — 40	40 — 50	60 and over
Scotland	43,6	31.3	17.2	7.6
Rural Districts	44.7	28.7	17.2	9.6
Large Town districts ...	42.9	33.5	17.1	6.1

It will be observed that the large town districts show a smaller number of persons under 20, which is due to a lower birthrate and a higher infant mortality. That they show a higher percentage between 20 and 40 is due to the immigration of young adults from the country.

The insanity statistics must therefore be corrected both for age and sex distribution in exactly the same way as statisticians correct the mortality rates of communities for purposes of comparison. They are presented in three forms, a "standard" rate, which would be the rate if the age and sex distribution of a community were the same as that of the country of which it forms a part, a "crude" or "recorded" rate, and a "corrected" rate.

TABLE III.

I select two Scottish areas, one purely rural and one purely urban:—

	Population	Insane	Standard Rate.	Recorded Rate.	Corrected Rate.
Rural	197,616	1112	3.37	5.62	4.86
Urban	631,513	2076	3.12	3.28	3.06

The table shows that while the population of the urban area is three times as numerous as the rural, the insane are less than twice as numerous.

We must look for an explanation of this within the rural area itself. The rural area comprises 59 parishes. In 34 of these the recorded insanity rate is high, in 25 it approximates to the normal. The inhabitants of the two groups are practically similar. Farmers, crofters, fishermen, with the usual sprinkling of other occupations.

In the group with the high insanity rate the population had been falling for 20 years; in the group with the low insanity rate, the population had been rising by natural increase, alone, for 20 years.

TABLE IV.

Insanity per 1000.

	Rise or Fall of Population in 20 years.	Standard Rate.	Recorded Rate.	Corrected Rate.
34 Parishes ...	−15,878	3.58	8.39	6,81
25 Parishes ...	+7,691	3.10	3.52	3.21

A community which is numerically decreasing is at a disadvantage with respect to the occurrence of insanity, for the normal age distribution of its population is greatly modified, and there is an insufficiency of new blood to check the tendency of any hereditary affection to appear.

TABLE V.

Age distribution (per cent.) of the two groups:—

	0 — 20	20 — 40	40 — 60	60 and over.
34 Parishes ...	39.7	12.1	10	7.8
25 Parishes ...	42.7	12.9	9.3	5.1

(2) The Influence of the Limitation of Sexual Selection.

When a community is being drained by emigration, the weak, the infirm and the mentally inferior, as a rule, remain behind, so that their proportion increases by mechanical ratio.

Exactly the reverse process takes place in the large urban centres which are being constantly reinforced by the addition of young healthy adults.

There is another factor of great importance, namely, the opportunities which a community offers for the marriage of its younger members. It is not possible to verify this statement by statistics, but it may be illustrated by examples.

Delage, in his work, "L'Heredite," says, "The inhabitants of the village of Eycanx had married among themselves from a remote period, and they almost all—men and women—presented a sixth digit on their hands and feet. Gradually they began to extend their matrimonial alliances beyond their own commune, with the result that the deformity entirely disappeared."

In a small fishing community in the United Kingdom about one in seven of the inhabitants suffered from Huntington's Chorea some forty or fifty years ago. Fishing communities seldom mix with the inland population, and before the recent great extension in the British fishing industry they intermarried within their own communities. With the advent of better boats and better means of communication, the various fishing communities all round the coasts were brought into contact and a much wider marriage selection became possible. As a result, Huntington's Chorea has almost entirely disappeared from this particular community.

About eighteen years ago the Medical Superintendent of the Glamorgan County Asylum wrote as follows: "Glamorgan owes much of its mental healthiness to the fact of its exceedingly mixed population, one third consisting of aliens—that is of people not born within its borders. In this county until it was opened out by the railway, the Vale of Glamorgan was its blackest spot as regards insanity, and its inhabitants were nearly all related and constantly marrying amongst each other."

If we refer again for a moment to Table II, it might at first sight seem that the age distribution of the Scottish rural areas (except for the greater longevity of the people) was more favourable to a low insanity rate than that of the urban areas. Against that, however, has to be put the evidently large emigration of young marriageable adults from the country to the towns, but for which the towns could not maintain their own populations by natural increase.

This constant stream of emigration reacts unfavourably upon the country districts, and favourably upon the town districts both as regards sexual selection and the tendency of any deleterious variation to appear in excess of the normal mean.

Insanity comprises probably more than one form of variation from the normal. There is, for instance, congenital mental defect which is largely a teratological variation. There is the variation which constitutes the basis of the confusional insanities which probably comprises a variation in the immunity of the body tissues against infection. There is also the variation responsible for the recurrent insanities and the neuroses. We may, however, from the point of view of vital statistics discount these distinctions owing to the unexplained fact of the transmutability of the heredity in all these diverse forms. That is to say that a neurosis in ascendants may appear as insanity in descendants, and vice versa.

There is no race of mankind that is free from the neuropathic or psycopathic constitution, although, as statistics reveal, some communities may be more favourably constituted than others not only as regards a predisposition to mental and nervous diseases, but also as regards the frequency of the manifestations of these affections.

These favoured communities are those whose populations are increasing by an excess of the birthrate over the deathrate, or by the migration of young adults. The tendency in all modern countries is towards migration of young adults from the country districts to the towns. So long as the birthrate in the country districts is sufficiently high to maintain a population adequate to the requirements of a normal sexual selection they will continue mentally healthy; but when, either through a fall in the birthrate or a surplus emigration, the population decreases, the outlook is less hopeful.

The large towns depend upon migration because, owing to their limited birthrate and their high infant mortality, they are incapable of maintaining a normal standard of population.

Any hereditary deleterious variation from the normal such as the psycopathic constitution upon which insanity depends has a tendency to be fostered by the mating of the units of a population which has grown stale through lack of an infusion of new blood. Conversely it is restricted by the unions of individuals belonging to community groups unrelated by blood and reared in different environments.

The present trend towards urban life makes it imperative in the interests of mental health that there should be, not only a large rural population, but that the birth rate in the country districts should considerably exceed the death rate.

THEORY OF RELATIVITY.

THE EVIDENCE FROM PHYSICS.

By

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THE claims of a new theory of physical phenomena to acceptance may be summarized under four heads:—

(1) Logical consistency of the fundamental hypotheses, including as a special case the truth of each.

(2) Simplified formulation of the relations between phenomena known, or assumed, to be interdependent.

(3) Deduction of relationship between phenomena previously regarded as mutually independent.

(4) Prediction of new discoveries, the possibility of which is inconsistent with previous theories.

The verification, or disproof, of the theory is attained, as a rule, from observational or experimental tests of the deductions and predictions specified under the last two headings. The simplified formulations are, clearly, not amenable to such tests, nor is the logical consistency of the hypotheses, unless they can be all shown to be true, in which case their consistency becomes a matter of course.

The theory of relativity, in its original, "restricted," or "special" form, was based on two hypotheses. The first of these asserts that natural phenomena run their course, according to the same general laws, for each of two observers, whether they be, relatively to each other, at rest or in uniform rectilinear motion. The second asserts that the ascription of a constant velocity to light, travelling in vacuo, constitutes a general law of the kind contemplated in the enunciation of the first hypothesis.

Neither of these hypotheses is susceptible of direct verification or disproof; the first of them, however, is tacitly assumed in the classical dynamics, which makes no reference to optical phenomena. The second is assumed in the classical electromagnetic theory, so far as the constancy of the velocity is concerned, but without reference to the case of observers in relative motion Each of these theories has proved so valuable within its own domain, that the assumptions of both could be, and were, regarded as well established a posteriori-

Both statements were, therefore, believed to be true, until Einstein showed that, taken together, they were inconsistent with Newton's laws of motion—or rather with the kinematical laws which underlie them. At once, then, the questions, Is the velocity of light really a constant? and, Is the succession of physical phenomena really of the kind alleged? became of the first importance.

The constancy of light velocity has recently been verified, in an indirect way, but probably to the highest order of precision of any known fact, by astronomical observation. Our readers will be aware that certain stars, known as regular variables, undergo a periodic waxing and waning of their light. It has long been recognised that these variations are unaccompanied by perceptible colour change; now it has been found that different series of photographs of such stars, taken on plates sensitised for light of different colours, all gave the same epochs for the attainment of maximum or minimum brightness by any one star. In some cases, the distance of these stars from the earth is so vast that the light took about thirty thousand years to traverse it; in other words, waves of blue and of yellow light, which started together somewhere about 28,000 B.C., reached the earth together in 1921 A.D. We have no knowledge at present of any agency, capable of changing the velocity of light at all, which would alter that of lights of different colours to anything like an equal extent; nor do we know of any medium, save vacuum, in which lights of different colours travel at anything like the same speed; hence the result is reasonably looked upon as verifying the constancy of light velocity in vacuo. Moreover, as it is quite independent of the earth's orbital motion, it really verifies Einstein's second hypothesis; for the precision of the result is given as one part in ten thousand million—only one-millionth part of the semi-annual change in the relative velocity of the earth and the stars, due to orbital motion.

Einstein's first hypothesis, taken by itself, is not yet verified, even indirectly, but, assuming the truth of the second, an a posteriori verification of the first was attempted by showing that the two in combination afford a ready explanation of certain phenomena, for which the older theories found it difficult to account.

The first of these phenomena is that disclosed in the Michelson-Morley experiment. Without going into details we may point out that the direct object of this experiment was a comparison of the times, taken by a wave of light in passing from one point to another and back again, when the line joining the points was set, first in the direction of the earth's orbital motion and then perpendicular to that direction. To the surprise of the experimenters, who expected a different result, these two time-intervals were shown to be equal, at any rate, within one part in a thousand million. From the standpoint of classical electromagnetic theory, there should have been a difference ten times as great as this; from the relativist standpoint, none at all, a statement which implies nothing more recondite than the direct application of the hypothesis to this particular case.

The second phenomenon, appealed to by the relativists, is the mode of propagation of light in a moving medium, such as a current of water, of which Fizeau's experiment gives an excellent determination. In this experiment, light, travelling with the current, is found to have its speed increased by an amount proportional to, but less than, the speed of the water itself. The formula by which Fizeau expressed his results was deducted by Einstein from his relativist kinematic equations, without requiring any assumptions as to either the nature of light or the constitution of the medium traversed; the conclusion in this case, however, unlike that of the Michelson-Morley experiment, could not have been foreseen when the fundamental hypotheses were formulated. As none before Einstein had imagined the experiment to be concerned with kinematics alone, we may regard the relativist account of it as coming partly under the third of our headings, as well as under the second.

Previous explanations of both these experiments had involved the enunciations of hypotheses of the ad hoc type. The Michelson-Morley experiment was accounted for by supposing that a body in motion undergoes a shortening in the direction of the motion—e.g., that man gets thinner, from front to back, as soon as he starts to walk; such a hypothesis seemed arbitrary enough until Larmor proved—what Lorentz had previously suspected—that it could be deduced from the electron theory of matter, assuming the electrons to act electrically as point-charges. As the evidence for the electron theory of matter is far more conclusive than that for the theory of relativity, Larmor's explanation, though generally neglected, was at least as good as Einstein's; only at a very recent date has experimental evidence suggested that the intra-atomic activities of an electron are not precisely those of a point-charge, as contemplated in electrical theory—a suggestion which, naturally, deprives Larmor's argument of much of its force. Fizeau's experiment had been brought into line with electromagnetic theory, by Lorentz's assumption that the moving water left the ether between its molecules undisturbed; on this hypothesis, waves of light, traversing the water, become corrugated instead of smooth, the magnitude and position of the corrugations on the wave-front continually changing; the velocity measured by the observer is, therefore, a sort of average. Later on, Larmor showed that the same assumption accounted for the facts, whether the waves of light be regarded as electromagnetic or not; but the arbitrary character of the assumption itself was unaffected.

So far, then, relativity had, till lately, the best of the argument; but a paper published a few months ago by Carvallo puts the matter in a new light. He shows that a number of recent experiments, of incontestible accuracy, by different investigators, are most reasonably accounted for by a reformulation of the fundamental law of electromagnetic induction; Faraday's statement of the latter, though correct up to a certain point, not being wide enough to cover these new facts. The electromagnetic theory, thus modified, leads directly to the Michelson-Morley and Fizeau results without any subsidiary hypotheses. Carvallo's explanation is certainly simpler than the relativists' reconstruction of space and time relations, and pretty well cuts the ground from under it so far as these two experiments are concerned.

In another direction relativity has fared much better. Early in the present century, the dynamical assumption of complete and universal mutual independence of mass and velocity, in moving bodies, was definitely shown to be inexact; the researches of Kaufmann, of Bucherer and others, proved that the mass of an electron is not a constant, but increases with its velocity relative to the apparatus by which the mass is determined. The increase is inappreciable at moderate or even at very high speeds, first becoming detectable at speeds exceeding twenty thousand miles per second. Speeds ranging from this value up to about eight times as much occur among the Beta electrons from radio-active matter; with these the variation of mass with speed has been very accurately measured. The experimental method is too technical to be described here, but there is no doubt about the result; the mass of the swiftest of these particles is about sixty per cent. greater than it would be if they were brought to rest. Two attempts to account for this were made on the basis of the electromagnetic theory; the success of one, due to Abrahams, was qualitative only, as the mass-speed law which he deduced departed from the experimental values by an amount definitely outside the limits of error of the latter. The other attempt, due to Lorentz, leads to a formula in complete agreement with the experiments; but to make it he had to assign to the electron itself the very same law of contraction that had previously been assigned to matter in bulk, in order to explain the Michelson-Morley experiment, without any of the independent justification of the step which existed in the latter case; the attempt was too artificial to convince anyone, especially when Einstein deduced the same formula directly from relativist principles without subsidiary assumptions.

This argument for relativity is considerably strengthened by Sommerfeld's researches in theoretical spectroscopy. Applying the Lorentz formula to the motion of intra-atomic electrons, he computed the difference between the masses of electrons occupying different positions within the atom; thence he was led to predict a host of possible discoveries regarding luminous and X-ray spectra. Many of these predictions have since been verified, with such precision as to suggest that the formula embodies a real law of nature, rather than a good empirical summary of one particular set of experiments. Between the relativist deduction, which brings it into line with other natural laws, and Lorentz's hypothesis, which leaves it, so to speak, in the air, the choice is pretty easy.

So far we have dealt with the restricted, or special, theory of relativity; we must now turn our attention to the general theory. This is something more than a mere generalisation of the restricted theory. While widening the scope of the first hypothesis, by affirming the invariance of the laws of nature with reference to observers moving, relatively to each other, in any way whatever, it at the same time actually replaces the second hypothesis by an entirely different one, referring not to the velocity of light, but to gravitation. This new second hypothesis, called the principle of equivalence, asserts that any change, perceived by an observer, as due to gravitation, would be equally perceived by him in the absence of gravitation, if he himself were in motion under the same acceleration as that gravitation, if present, would be competent to produce. This amounts to asserting that inertia and gravitation have a common origin; Einstein deems it necessary to seek this common origin in a variation of the character of space itself in the neighbourhood of matter. He accordingly replaces the Newtonian law of gravitation—which the Kaufmann-Bucherer researches had already rendered meaningless as a general statement—by the simplest set of relations between material bodies consistent, on the foregoing principles, with the existence of gravitational fields at all; it becomes obvious, in the course of the argument, that energy must be affected by gravitational fields as well as matter. The selection of this particular set of relations as the new law of gravitation is as purely hypothetical as Newton's enunciation of the inverse square law.

The theory of gravitation thus obtained was shown to be superior to the Newtonian in several ways. Not only did it fully account for all the astronomical phenomena which had been successfully included under the Newtonian scheme; it also accounted for one well-known phenomenon that was at variance with the latter, and predicted two others, previously quite unsuspected, one of which at least could be regarded as crucial, so far as a decision between the two theories is concerned.

According to the Newtonian theory, the orbits of the planets should retain their positions, relative to distant fixed stars for all time, save for small changes, of an oscillatory character, due to the attractions of the other planets. The orbit of Mercury has long been known to defy this prescription by undergoing a uniform, but very slow, rotation relative to the stars. Now Einstein's theory, when worked out, was found to necessitate a rotation in all the planetary orbits, the magnitude of the rotation depending on the size and shape of the orbit and the length of the planet's year. These computed values, for every planet except Mercury, are found to be too small to observe—which fits in with the fact that none such has been observed; that for Mercury is 43″ of arc per century, the values deduced from observation by three eminent astronomers being respectively 43″, 40″, and 38″ per century. The difference between these estimates are of the same order as the unavoidable errors of the determinations themselves. This discovery of Einstein's is of at least equal significance with the famous discovery of Neptune by Adams and Leverrier.

The first of Einstein's predictions illustrates, in a striking way, the transformation in optical theory involved in the passage from the special to the general theory of relativity. According to the former, the constancy of the velocity of light in vacuo might or might not be maintained if the light passed near to a gravitating mass; according to the latter, the light would certainly be deflected from its original path by an amount proportional, directly to the mass and inversely to its distance from the path. The computed deflection in the second case is double of what would be possible—if it occurred at all—in the first case; but, by a strange coincidence, it is also double of what it would be if light consisted of material corpuscles, as Newton supposed it to do. Only if the wave-theory of light and the Newtonian theory of gravitation held good simultaneously, would the light continue in its original path.

We see then that a merely qualitative investigation of this predicted deflection would be inconclusive; it would still leave the choice open between the corpuscular and undulatory theories of light on the one hand, between the Newtonian and Einsteinian theories of gravitation on the other. Precise measurement is called for, and this, as it happens, is by no means easy to secure. The sun is the only body, massive enough to produce a measurable deflection, open to our study; the necessary observations can be made only during a total eclipse; a mean precision is required, in the measurement of the eclipse photographs, of one hundred-thousandth of an inch—an attainment on the verge of the impossible; moreover, it is not quite certain, at any rate in the case of the deflections hitherto observed, that they were wholly due to solar gravitation.

As everyone knows, the test applied to Einstein's prediction during the eclipse of 1919 was, at least, partially successful. Three independent sets of observations—one of them not too reliable, owing to imperfections in the photographs which rendered measurement uncertain—were in unequivocal agreement as to the **fact** of the deflection; the individual mean results, derived from the two best sets, were also in moderately good agreement as to its **amount,** while their mean, in its turn, was practically identical with the value predicted by general relativity. There was, however, considerable discordance between the results computed from individual stars, and it cannot be said that the Einstein law of variation of deflection with distance was verified at all. Until this is effected, it is open to anyone to ascribe a part of the observed deflection to meteorological changes accompanying the passage of the moon's shadow. Sir Arthur Schuster has attempted to show that the effects due to such meteorological changes are of a lower order of magnitude than the Einstein effect, but his argument is scarcely conclusive.

It is hoped that the observations, taken during the recent eclipse of 1922, will have done something to clear up these points, as the instrumental equipment, especially that devoted to investigating the law of variation, was much better suited to the work than that employed in 1919. But it still remains to be seen whether any portable equipment can afford a really conclusive test by the study of a single eclipse, or whether we must wait for cumulative evidence, derived from a series of eclipses of different duration, and therefore differently affected by the meteorological conditions.

With the discussion of the eclipse observations, our survey of the physical evidence really comes to an end. We do not include in it Einstein's second prediction, to the effect that the frequency of vibration of an atom would be found to depend on the magnitude of the gravitational field in which it existed. The reason for the omission is that the prediction itself is suspect; Jeffries, in England, and Priestly, in Australia, have shown, in different ways, that the fundamental equations of relativity, as presented by Einstein, are susceptible of more than one interpretation in this respect, and that Einstein may not have—probably has not—hit upon the right one. This suspicion is strengthened by Weyl's brilliant extension of the theory, according to which the relation between atomic frequency and gravitational field is wholly indeterminate. Even if the predicted relation were verified, the verification could scarcely be regarded as evidence for the reliability of the theory, though it would certainly attest its usefulness; but the prediction has not been verified. A number of the most competent investigators, both in Europe and America, have taken up the problem; but their results are in flat contradiction. The predicted difference in frequency between a solar and a terrestrial atomic vibration—about one part in three-quarters of a million—is not in itself beyond the reach of measurement; modern spectroscopy has dealt successfully with even smaller quantities. But the effect sought for, if it be real, appears to be masked by those of a number of actions, part mechanical and part purely photographic, our knowledge of which is, as yet, incomplete.

To conclude. The direct and incontestable physical evidence for the theory of relativity is at present confined to the Kaufmann-Bucherer experiments, Sommerfeld's verified predictions, and the motion of the orbit of Mercury; to these we may add, with some probability, the gravitational deflection of light; but that is all. On the other hand, not a single known physical fact is opposed to it—which is more than can be said for any other physical theory in existence—and it unifies departments of knowledge, such as dynamics, optics, and astronomy —also, in Weyl's development, electromagnetism—previously regarded as independent. Pragmatically speaking, its position, if by no means impregnable, is certainly strong.

RELATIVITY AND REAL LENGTH.

By
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IT is a rash thing sometimes to ask an innocent question. This is particularly the case where one has to answer the question oneself, and in such a way as to satisfy the relativist. I glance at a ruler lying on my study table, and turning to my relativist friend, I ask him to tell me, if he can, how long the ruler really is. I soon discover that the whole relativist universe has been set vibrating by the question, and that its import is well-nigh unfathomable.

The very first step towards a solution brings the difficulties full into view. The ruler's real length, we are told, is a matter that concerns not the ruler only, but oneself also as observer. Length, we are assured, is not a quality of the ruler, but a relation between ruler and observer. Sitting opposite to the ruler I may assess its length at one foot, but flashing past it at a speed approaching that of light, I must judge it to be six inches or less. Length, then, is a relation, not a quality, and the same holds good of duration. They "are not things inherent in the external world; they are relations of things in the external world to some specified observer." (Eddington, "Space, Time and Gravitation," p. 34.)

For simplicity's sake we will assume that the ruler is a perfectly rigid rod, and not liable, therefore, to change its length with fluctuations of temperature, or its straightness with conditions favouring flexure.* Still, despite its rigidity, the relativist rod will show a length that varies with the rate at which the observer increases or decreases his distance from it.

Common-sense is apt to stumble over this fundamental requirement of Relativity Theory. The ruler we handle seems to us so manifestly to possess a length of its own, a length perfectly constant if the bar be a rigid one. And our first rejoinder to the relativist may very well be that he is confusing the ruler's own natural length with the observer's measure of that length. The measured length may vary according to relativist requirements, but the rod's own length, surely, remains steadfast throughout. But to this objection the relativist replies: "I cannot conceive of any 'length' in nature independent of a definition of the way of measuring length. And, if there is, we may disregard it in physics, because it is beyond the range of experiment." (Eddington, id. p. 8). It is indeed only as measured that facts have any relevancy for physics, and even our common-sense perception, we are told, is "a kind of crude physical measurement" (id. p. 15). If we insist on accepting the rod's own extendedness as a real length that remains constant through all variations in the measuring, we shall have to explain how we know the unmeasured length to be constant, or, in default, retain on our hands the old spectral thing in itself, about whose properties, as we know, it is wisest to say nothing.

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*The discrepancy between the ideally rigid body and the body as it occurs in nature is covered in practice through the mediation of accurately tested measuring-rods. "It is not a difficult task," says Einstein (Sidelights on Relativity, pp. 36-37), "to determine the physical state of a measuring-rod so accurately that its behaviour relatively to other measuring bodies shall be sufficiently free from ambiguity to allow it to be substituted for the 'rigid body' It is to measuring-bodies of this kind that statements as to rigid bodies must be referred."

A more promising line of criticism might be the following. We might argue that though the measured length of a rigid rod might vary with its motion relatively to an observer (according to the Restricted Theory), or with its place and position in the gravitational field (as the General Theory requires), this would not compel us to admit that the rod had no objective length or extendedness at all. Might it not have as its intrinsic property an "indeterminate length," relation to the observer having the effect not indeed of first introducing the length relation, but only of rendering an indeterminate quality of the rod determinate?

The suggestion has a certain plausibility, and, no doubt, some share of truth. It seems prima facie reasonable that the real length of the rod should be its algebraical length x, and that the measurable arithmetical lengths should record its various appearances according to circumstance and in accordance with law. We recall the Boundless of Anaximander, and the Primary Matter of Aristotle. We recall the view that space and time are, in themselves, not actualities, but possibilities, real possibilities of figure, measure, duration. In language familiar to philosophy we would now say that the rod's real length is its universal length, and that its particular lengths are its lengths as they appear according to changing conditions of movement and position. Moreover, this view of real length would fit in quite well with geometrical requirements. Consider the real length of the hypotenuse AB of the Euclidean right-angled triangle ABC. This mathematically real length is precisely any length. What is determinate here is simply the relation of the length of the hypotenuse C to the lengths of the sides A B containing the right angle, as given by the equation $c^2=a^2+b^2$ but a and b may have any arithmetical values we please to give them. So the radius of a Euclidean circle has a purely indeterminate length. Its proper length is any length.

But despite the simplicity of the view that the rod's real length is indeterminate, it is not scientifically satisfactory. And this for two main reasons. First, not being measurable or countable, its reality is not strictly a physical reality, which must rest on number and measure as a basis; and second, being intrinsically indeterminate, it cannot satisfy the requirement that the real shall be something permanent and abiding, something that abides through change. Instead of being an invariant, the indeterminate length is intrinsically a variable.

It is not easy to see how these two main requirements of measurability and of invariancy can be simultaneously met. If we return to the view that the rigid ruler's real length, in so far as it is measurable, is indeed its natural length as an objective fact controlling the empirical measurings of the individual observer, and that in no other sense is it both measurable and real—real, that is, in the sense of being just what it is, and not what the measurer would wish it or think it to be—we seem driven to add that it cannot then be an invariant, the same for all fields and observers, for has not Einstein shown that length is a function of the mobile gravitational field as well as of the relative movement of the particular observer?

Certainly the requirements conflict. But may not the conflict arise from a tendency to simplify the matter overmuch?

The Logic of Relativist Reality can be understood, I would venture to say, only if we bear in mind the complexity of the requirements of physical theory as an organised system: the need for direct contact with measurable fact, on the one hand; the equally imperative need for organised unity of scientific grasp, on the other; and thirdly, the need for keeping these two fundamental requirements in working harmony through the binding force of mathematics. Now, Einstein has succeeded in adequately meeting these three main needs. "Whatever can be measured," says Planck, "is real."* Einstein's whole procedure is controlled by respect for this dictum, and to this extent and in this sense he is a radical empiricist. One fundamental feature, at any rate, of the reality of the rigid ruler, is, in his eyes, its measurability through the help of sense and muscle, through the sensori-motor mechanism of the individual human body. And yet this respect for fact is dominated by respect for law, and above all by the basic recognition that it is only as an element in a natural order, only as conforming to law and measure, that fact has any meaning for physics at all. It is because Einstein accepts a fact's conformity to law as essential to its relevancy for physics that he can logically unite his empirical convictions with an absorbing quest for the conditions which shall justify the reign of law in the world of relativity. When Einstein discovers his general formula for the fundamental laws of nature, a formula which holds good for all natural events, whatever be the special point of view, or special axes of reference adopted by the observer, he connects in his achievement the requirements of measurability and of invariancy alike. Starting from the conception of a measurable Euclidean straight line, relativistic theory takes us through its two levels—those of its restricted and generalised formulations—to the weird, but fascinating conception of a line-element, ds, the differential interval between two point-events in a spatio-temporal continuum, four-dimensional, non-Euclidean, dependent for its geometrical form on the conditions of the gravitational field within which it figures. This "interval," as the fundamental invariant of the relativist doctrine is the supremely real thing for it. It is, in its general form, non-intuitable, non-measurable, and yet is no inaccessible thing-in-itself, but intelligibly connected through appropriate gradings with what is intuitable and measurable, as its limiting cases.* Hence to grasp Einstein's idea of physical reality we must include in one scheme both its empiricist and its rationalist elements, the measurable fact accessible to sense and muscle, and the invariant accessible only to the mathematical mind. The latter connects continuously with the former. Like the Platonic Good, it is the abiding source of all that is intelligible in the physical world, but, unlike it, overflows into all the sub-worlds of apprehension without break of continuity, and under clear limitations which can be mathematically controlled and defined.

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*Quoted by Moritz Schlick, "Space and Time in Contemporary Physics," p. 23

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*Expressed in the light of the six equations in which Einstein's Gravitational Theory is embodied, it takes the form: $ds^2 = -\frac{dr^2}{j} - r^2 d\theta^2 - r^2 \sin^2 \theta d\phi^2 + j dt^2$, where $j = 1 - \frac{2M}{r}$. m being the mass of the attractive particle to which the gravitational field is due; and r, θ, ϕ the polar co-ordinates corresponding to the x, y, z in the standard expression for the interval element. Now let $dt = 0$ and we get a formula for measured length which shows that in this "real" universe it is a function of the gravitational field. For any given value of m, the rod's real geodetic length (for it can no longer be straight, the geometry being non-Euclidean) will be a fixed amount, the same for all values of the co-ordinates r, θ, ϕ, And if $m = 0$ and $\therefore j = 1$ the invariant takes the form proper to the restricted theory, and the measured length is Euclidean. There is therefore a continuous mathematical connection between the actual measure of the ruler taken under ordinary physical conditions and the leading invariant of the General Theory, the real matrix of all physical reality. (Vide: Bolton, "An Introduction to the Theory of Relativity," ch. xviii).

Hans Reichenbach, in his "Relativitaets-theorie and Erkenntnis Apriori," Section viii. (Julius Springer, 1920), draws attention to the change in the object-concept brought about by the Theory of Relativity, and illustrates by reference to the concept of length. What we measure as length must be stated in terms of some system of co-ordinates. So stated it is a clearly-defined magnitude. But it is also subjective since the system of co-ordinates is arbitrarily chosen by the observer. "It is when, in addition, we supply the transformation formulae for every other system that our statement first wins a really independent meaning. The new method of the Theory of Relativity consists precisely in this, that through the transformation formulae the subjective assertion wins an objective meaning. . . . What is ascertainable is only the length as measured in some one system. And this is only one expression of the real relation. . . . It is only when we supply in addition the transformation formulae that we eliminate the subjective, arbitrary influence of the reference system, and also reach at last a genuinely objective determination of the real" (id., pp. 92-93).

On this view the physically objective is reached only through mental considerations whereby a purely subjective starting-point is adequately compensated, and its subjectivity sifted away. The very meaning of the General Theory of Relativity is that metrics are much more than a mathematical measuring scheme for bodies: that they are in fact the form for conceptually presenting a body as an element in the material world (cf., id., pp. 97-98).

Now, it seems to me that this view, fine and suggestive as it is, does not take sufficient note of the fact that there is a privileged, though not an absolute position from which the length relationship can be stated, namely, that in which the observer's view-point coincides with that of the object he proposes to measure, so that, for that position, variations due to differences of time and rate of relative motion do not arise: it is the position of the measuring-rod itself. Objectivity of the empirical kind is here secured through the sole agency of measurement, and apart from the accessory assistance of the transformation equations through which the findings of different observers may be interconnected, and results at one point of observation reduced to corresponding results obtainable at any other observation-point. It is true that measurement itself is a metrical relation, so that the relativist view that metrics is the key to matter is not hereby impugned, but objectivity and measurement are more intimately connected. The measure taken of a ruler by means of a measuring-rod reveals the natural length of the ruler for all the purposes of physical science. And the measure includes no reference to a clock. It is true that the length will vary with movement and in the direction of motion, and to ascertain the law according to which this variation takes place is of the utmost importance for reductions of measurements from one observer's viewpoint to another's. But the standard measurement will always be that obtained through the direct application of the measuring-rod, or, where such superposition is not possible, the nearest indirect equivalent, whatever that may be.

Further, the relativist concept of objectivity is incomplete apart from a reference to the "interval" or line-element as the fundamental invariant. It is only in relation to this invariant that the deeper objectivity and the part played by mathematics in discovering and defining it can be made clear. The measured length, on the relativist view, is necessarily an abstraction. For the measure is spatial only, and we are none of us allowed to forget Minkowski's dictum, uttered in 1908: "From henceforth space in itself, and time in itself, sink to mere shadows, and only a kind of union of the two preserves an independent existence."*

Summing up on the matter of the ruler's real length, we would suggest: first, that for all purposes of empirical application the real length is the natural length as discoverable through direct measurement, or its nearest mathematical substitute; second, that this natural length is none the less abstract and derivative: the space-shadow projected by a "world-line" whose law of being and of movement is given by an ideal invariant which, with mathematical rigour, controls the metrics of the relativist world; and third, that through the principle of continuity the natural length as directly measured is connected with the ideal length as a world-line through a wonderful system of mathematical workmanship, so that the one participates in the other, the natural in the ideal, as its projection or partial manifestation. To grasp the natural length as a mathematically controlled projection from an unpicturable universe of world-lines is no easy challenge for the mind to meet, but owing mainly to the rigorous mathematical character of the invariants involved, the challenge opens up a view of intelligibly organized physical reality which should be an inspiration to truth-seekers for many years to come.

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*Moritz Schlick ("Space and Time in Contemporary Physics," p. 66) points out that Minkowski's synthesis is itself "a mere shadow, an abstraction," and "only the oneness of space time and things has an independent existence."

STRIFE.

By

W. JETHRO BROWN, LL.D., D. Litt., President of the South Australian Industrial Board.

OUR age, unique in so many of its problems and perplexities, presents as a dominant characteristic a spirit of revolt. Much of our unrest may be due either to a paralysing complexity of environment, or to a protest against entanglement in a web of traditional conventionalism—innumerable tyrannies which tend, in quite superfluous ways, to rob life of its joy and zest. The more menacing forms of unrest centre around the possession of material things. In a maze of industrial discontent the individual seems to lose that sense of proportion which philosophy should teach or restore to him.

Reflection on such high matters brings to my mind a dialogue which, so far as I am aware, has not yet been published. It purports to have taken place between Socrates and one designated "Stranger." I am not able to vouch either for the authenticity of the dialogue or the propriety of the translation, if indeed translation it be. Socrates contributes little himself to the discussion, save by way of asking questions after the Socratic manner. The answers of the Stranger appear often naive, though not lacking plausibility and even at time a conscious or unconscious irony.

Socrates: It has come to my knowledge that in your country there are many great and wonderful things; but the nature of the mind is of more interest to me than inventions of science or the maladies of the body. Therefore am I more concerned to know whether it is indeed true that in Modernia, from whence by report you come, all men are free and possess that knowledge which is wisdom.

Stranger: All men indeed are free, O Socrates, since all men can vote for those who rule in the Assemblies, and in law no man is in bondage to another. As to whether they have the wisdom of which you speak it would ill become me to say, since I am but one of many. Yet do we deem ourselves wise. This has its advantage, since if a man be not wise, it is yet agreeable for him to think himself so. Yet, since opinions on many matters are often at variance, it follows that a man's freedom to think himself wise necessitates a freedom to think others who do not agree with him unwise. So have I heard it said that whilst many in our City have more of information than their minds can apply (or, as a wit has put it, are too highly educated for their intelligence), there are others more fortunate, who, from choice or necessity, are not troubled with much learning, and therefore enjoy the advantage of being able to arrive at desired conclusions without their minds being confused by what has been said or may be said to the contrary. Now, of these two classes, the one often derides the other. Indeed, such expressions are common as "the pedantry of learning," and "the value of ignorance." But whether these taunts be just I am at a loss to say.

Socrates: But what say those who, since they are chosen for the Assemblies, may presumably be taken as wise, or at least learned?

Stranger: They say that the voice of the people is the voice of God. Therefore should the people be wise and the lawmakers most wise. Yet have I heard it said in Modernia that a man is most wise who counts himself such, provided he can speak loud enough to be heard, and be not too long in speech to try the patience of those who may chance to listen. I but repeat what is said.

Socrates: If what is said be the truth, it would seem as if the voice of wisdom were like to be drowned in the babel of tongues. But yet perhaps you may be able to tell me in what, apart from the knowledge of many secrets, have your people advanced beyond those whom I knew at Athens?

Stranger: In truth, O Socrates, I would rather you come to Modernia and judge for yourself. I am not learned enough in Athenian ways to answer your question. Yet have I noticed, even within the short span of my days on earth, that we have developed a great capacity for fighting over many things, and of worrying about anything. If I may speak of such matters, tradition says of you, O Socrates, that you would not oblige even your wife by quarrelling with her though she gave you much opportunity. Now with us, even though a man may not have a wife, he finds it easy to quarrel with almost anyone, and if he cannot find anything to worry about in his present, he can worry about what may happen next, when so many strange things happen day by day in one part of the earth or the other. Lest he should be so supine as to prefer repose, we have a great institution called the "Press." Now the chief function of the press would appear to be to collect from all the world information of disasters, plagues, famine, pestilence, and crime. You will agree that this shows that in some respects at least we have advanced towards a life of excitement.

Socrates: But is not this life which you describe as one of excitement very disturbing and full of danger?

Stranger: In our hearts I think most of us believe in disturbance, O Socrates. Indeed, few phrases amongst us are more common than "divine discontent." As for danger, it is not quite with us as I suppose it was with you in Athens when a man quarrels. We have a saying that "the word is mightier than the sword." Men in Modernia, when they wish to get a little excitement by quarrelling, do not seize the sword. They simply call other people names, and get those names repeated as often as may be in the market place or elsewhere. This may seem to you but abuse, yet though it be no more, it generally serves the purpose. In any case, it is less costly than the sword. Here again have we surely advanced, since to wound another in the soul is less arduous and expensive both ways than to wound another in the body.

Socrates: You use language which I do not wholly follow; but I can see that there may be some advantage in your way of conducting a quarrel. But tell me, what is the most common reason why men quarrel, since surely they must at least give some reason?

Stranger: The reasons change from time to time and as occasion offers. When I left Modernia the most common reason was the unequal distribution of material things—some people being rich and many poor, in the possession of material things. Thus, while many people complained of the high cost of living, and others complained of the high cost of wealth, there was no little division of opinion as to which evil was the worse.

Socrates: But how can there be many poor, seeing that, as I have been told, you have great wealth of possessions?

Stranger: Understand, O Socrates, that the words "rich" and "poor" are relative. We believe in freedom of thought. So is man at liberty to think himself poor who has not so much of this world's goods as some other person he may chance to have in mind. Few are so poor as to find it really difficult to purchase what I suppose you would have deemed the necessaries of life. Yet is there much dispute as to what are the necessaries of life. Indeed, I do not know how to define them save as such material things as one has grown accustomed to, or is credibly informed he ought to become accustomed to. But in any case, it follows that a man can hold himself either rich or poor according as may best suit the circumstances so as to make a long quarrel. For a quarrel would soon be ended if nearly all were on one side or the other.

Socrates: But since in your country every man is a citizen and can vote for those who rule in the Assemblies, if to be poor is deemed an injustice and if, as I must suppose, the relatively poor are many, why do they not in their Assemblies make laws so that all shall be either rich or poor?

Stranger: But, O Socrates, if this were done it would deprive men of the chief reason which they now have for quarrelling, the which, as I have said, conduceth to excitement. But this apart, what you suggest would be very difficult to achieve. In Modernia to-day, the means of producing wealth are so complex that it is easier, as one of our great men hath said, to make the rich poor than the poor rich. Which would in no wise advantage any. Then again, those who hold themselves as of the poor do not act in harmony, or as one. Amongst their leaders there are many who have many beautiful theories for a new world. But these theories, when tried, seldom survive. Indeed, if one aspires to be a leader of the populace it is of no small account to proclaim a theory which cannot be soon put into practice, provided the theory sound well. By so doing the leader is saved humiliation; and he and those with him have throughout the short span of their lives a great and glorious ideal. Now, as the things which are possible are easy to imagine, it follows that those who hold themselves as of the poor, if they weary of quarrelling with the rich, yet find much pleasurable excitement in quarrelling with one another.

Socrates: By Zeus, I had thought that in the democracy of Modernia the citizens would prefer to live in peace and harmony.

Stranger: So much indeed is professed. But it would be a hard world if a man could not profess one thing, yet act to the contrary. While men in Modernia talk much of peace and harmony, they are careful not to allow their speech to keep them from that which, as appears to me, they love best —that is to fight, each in his own fashion. In a country unknown to the Athenians, O Socrates, there is a pretty bird of small size, yet very wise. It will sit on a bough singing with its brother most sweetly. But if its brother should glance away, it will forthwith pluck out that brother's brains, and having eaten thereof, it will fly to another branch of the tree and grow indignant upon the thought of the iniquities of its brother. Behold here many satisfactions— that of having an ample meal; that of reflecting on its own valour and quickness to take advantage of opportunity, or as we say "initiative," and that of having prevented its brother from doing any harm that he might perchance have had in mind to do. Now though this may seem to you to be a fable it is indeed true, and is not without analogy in the life of the people of Modernia. We are wise enough to discover many opportunities of self-satisfaction which, being interpreted, means most often in practice, as expressed in the common speech, "business is business," or words to that effect. Further, O Socrates, learn that it is only in what we call politics that men have equal votes. The industry of the country is an aristocracy in which the best rule without being chosen. The best are those who, either by ability or by decree of the Gods, sometimes called by the envious "happy accident," are in a position to control the use of wealth. And this indeed seems right. For as it is often said with us, any man, even though he should be a fool, knows enough to govern the country; but only a few know how to conduct a trade or business.

Socrates: But how so?

Stranger: If an industry or business is not profitable it has, as we say in the common speech, to "shut down." But in the affairs of the country things are happily otherwise. The country must go on. If mistakes are made, what we call the great G.P., that is, the General Public, has to pay for it. You will perhaps wonder why the G.P. does not object. The G.P. does object, and citizens derive much pleasure from contemplating what they would do if elected to the Assemblies. In practice, however, this signifieth less than you might think, because it is very common, even where a mistake has been made, for the G.P. not to know. This is owing to the multitude of things that are said, and the multitude of things that are not said, or if said, are little regarded. I say "little regarded," because few rights of the citizens in Modernia are held in higher esteem than the right of each man to have his own opinion. And even to express that opinion whether or not it be worth expression. I admit that this hath its disadvantages; but so much may be said of every right.

Socrates: You would almost persuade me that the people of Modernia think ideals of truth and justice of slight account.

Stranger: Not so; though I admit that most people in Modernia most commonly believe only the things which are pleasurable or agreeable to reflect upon, or conducive to a conviction of the superiority of one's own judgment. As to

JUSTICE, however, few words amongst us are held in higher esteem.

Socrates: I should like to know what is meant in Modernia by Justice. The matter was oft discussed when I was in Athens.

Stranger: You do indeed ask me questions not easy to answer; yet shall I do my best to answer them. Each man interprets justice in his own manner, or after the manner of his class or group, or as the vulgar tongue hath it, the "pack." The which is surely right in a land where all are free. Now there is one class which regards as just, that which has been, and is, and, as they hope, and pray, ever shall be. And there is another class which mean by justice the things which cannot possibly be. Great struggles, and much agreeable excitement, result from conflicts between these two classes. As I have already said, the conflicts in Modernia are not by the sword, since that were costly to life; and it is a principle, not perhaps avowed, yet acted upon, that life is sacred, and that length of days is more to be sought after than the ideals of truth and justice upon which you ancients dwelt, but which in Modernia we know how to use, each to his own advantage.

Socrates: But are there not any who think truth and justice to be good in themselves, rather than a pretext to justify, as occasion may offer, what seems to be of advantage either to a man himself, or to his "pack"?

Stranger: There may be indeed a few, as I think, who will not understand that ideals are for men, not men for ideals, and so really deprive themselves unnecessarily of the joy of thinking or of avowing the things that are convenient. But such men, if indeed there are such, are of little account or influence. Yet is it true that most men like to think, and still more to say aloud, that they hold the ideals of truth and justice in honor. Even in Modernia we cannot easily free ourselves from what many of our learned writers call the thraldom of tradition. Of the things which have been handed down to us by our forefathers, whether material goods, the forms of social and economic living, or even ideals of the mind, material goods alone are an unmixed gain. Yet since man is man, needs must he be influenced by what the ancients have taught. From which I must admit that doubt may arise whether, after all, the ancient ideals were not right, though ill applied. Yet if they be right we have made unto us false Gods of the things that are convenient, the things which were a heresy to proclaim. Our practice is, as I say, to praise truth and justice while acting in accordance with them as may be expedient. Yet, as those who rule in the Assemblies have oft found out to their own undoing, it is not easy to praise justice without being entrapped in one's own verbiage. To be superior to ancient ideals, we must know how to use them for our own purposes, and just as occasion may warrant. Now this is a thing not easy to achieve. So there are scoffers amongst us who use language hard for me to translate. To wit, "Missing the 'bus," "Skating on thin ice," and "Spiritual slimness." And the sting of such words lies in the fact that, though the ideals of truth and justice have as I suppose never been really adhered to, save by a few who from time to time have been killed off as being a nuisance to the public, yet these same ideals do sound well. Why, I cannot say; but yet is it even so.

Socrates: What you say is of interest, though not easy to reconcile. Yet should I like to know what the people of Modernia think of the Nazarene, whom we all here revere, and particularly what they think of his teaching that true happiness is found in love and service.

Stranger: I wish, O Socrates, you would not persist in asking me difficult questions. Yet must I in courtesy continue to answer as best I can. As appears to me, while the name of the Nazarene is highly praised, we get over the difficulty of acting in accordance with his teaching by holding that he did not mean what he is reported to have said.

Socrates: How so?

Stranger: For many reasons, but most obviously because they would not pay. Hence we do not openly reject his teachings, but adapt them. This is sometimes called in the common speech, "Making the best of both worlds"—a thing not so easy to do as it may seem, yet most desirable. But being difficult, each class or section of the people appoints persons to show that happiness, and also ideals of truth and justice, are really being served. Such persons are, of course, derided by one another, since they proclaim things which cannot be reconciled. But, in truth, they only do what they are paid for doing. So is their own conscience clear. In any case, if they be not shrewd enough to make out a good case, or if their speaking lack what is called in the vulgar tongue "punch," then are they "scrapped."

Socrates: I can partly understand. But I should like to know how you "adapt," as you say, the teachings of the Nazarene in the daily life and work of the people.

Stranger: Learn, O Socrates, that religion, or the belief in the Gods, or, as we generally hold, in God, is one thing.

What we call politics is another thing. What we call industry or business is yet another thing. We do not make the mistake of mixing these separate things together. As thou must surely see, that would lead to endless confusion, and would even humble a man in his own eyes. In industry, consider what would happen if those who are directed and those who direct should work in harmony and in a spirit of mutual aid and service! Much of our opportunity to quarrel would be lost. In politics the leader must follow his party or he cannot long remain their leader. But in industry it is otherwise, as I have already said. True, there are some captains in industry who try to work in a spirit of mutual aid. But they are few in number, and the greater part of the people who are hired do not seem to regard them with great favor, and for good reason, lest perchance such examples might be followed generally and the many thereby lose, as I have said, opportunities for fighting and quarrelling—opportunities which they prize highly, though it is not usual to say so openly. You will see that by the keeping up of strife between the classes, one class is able to say, "You are vampires," whilst members of the other class, if not of the few who exercise power and enjoy great riches, yet are at least able to say, in the vulgar tongue, "The country is going to the dogs." A saying which, since it is oft repeated, must needs be in some way or other a satisfaction to him who speaks it.

Socrates: I cannot easily follow what you say. That man should still be governed by passion and appetite rather than by reason I can at least comprehend. But even so, I should have thought that men would not quarrel for the sake of doing so, but for some further end, such as perchance the equal possession of material things.

Stranger: Learn, O Socrates, that amongst us the desire to quarrel, though you may deem it not reason but mere passion or appetite, is very strong. Again, I am not convinced that this desire to quarrel is not in truth Reason, since the fulfilment of the desire bringeth great satisfaction, or, as perhaps you would say, self realisation. Reflect, further, that since the unequal distribution of material things is the most common occasion of quarrel, one who is poor or holds himself of the poor, if he were to work in harmony with those who are rich, or hold themselves of the rich, would lose much: on the one hand the joy of disputing, on the other the chance that by keeping up the quarrel he may ultimately gain more of material things.

Socrates: It would seem as if the rich live in constant danger of losing their riches.

Stranger: That may be indeed so. But they have many satisfactions. Power over others is one. For, as a writer of later time than thou hath said, it is better to be feared than loved, for men offend less readily those whom they fear than those they may love. The joy of the display of riches is, too, a thing which enableth a man to look down on others, and excite their envy. The joy of strife, though not so great as among those that are of the poor, is yet a joy which may be exercised by the rich on a very large scale, if a man be so minded. Learn then, O Socrates, that even the rich in Modernia have much, as you might say, to thank the Gods for.

The dialogue ends abruptly. A reader may think that "Stranger," if he hails from Australia, possesses more humor than veracity. Personally, I confess myself intrigued. The point of view may seem peculiar, but is it without justification? In politics, the bond which unites a Party so often bears the semblance, if not the reality, of a common aversion to, or hate of, some other Party. In industry, we find many employers and employees who at least **act** as if strife was a thing to be encouraged for its own sake. In social life generally, barriers, senseless animosities or antipathies, mock the Spirit of the Master whom we should have learned to revere. The war which was to end war has not improved matters. Fortunate as the situation of Australia is, we have not escaped the contagion of **nerves** which in Europe verges on national hysteria. How often are ideals of truth and justice merely used as means to material ends! How often is the natural craving to possess and enjoy material things subordinate to a desire, if not to maintain a standing feud, at least to penalise! Perhaps only in sport does combat take the form of friendly rivalry. While men are quite as eager to win a game as to make a bargain, the forms of fighting and the spirit of conflict differ. Throughout the industrial life of our day we find primeval elements of hate and bitterness. One authority estimates that private-owned industry is fifty per cent. less productive than it ought to be because of our failure to work in reasonable harmony. Strikes, lock-outs, etc., are relatively negligible. Far more serious is a less spectacular friction which dissipates physical and mental energy and makes all men poor alike in spirit and in results. If two men quarrel over the possession of a can of milk, they may at least agree to place the can in security whilst they fight out their differences lustily. But in the very complex organisation of modern society the can is not easily put on one side—perhaps may not be. Let us suppose a group of men, one of whom owns an orchard. Then, whether a feud goes on merrily, or in subterranean ways, the thought of the owner is diverted from how to increase the quantity and quality of his orchard, whilst the thought and energy of those who work with him are enfeebled and perverted—a veritable climax of stupidity, in which all alike suffer. Yet it is just this climax of stupidity which we confront to-day. We pay for the luxuries of hostilities and mistrust by going on short rations, and a general sense of intolerable grievance.

The remedy, or at least a partial remedy, a real and definite step forward, is simple. It should be obvious. At the suggestion, the words "industrial democracy" may rush to the lips. I prefer not to use such words because they have become associated with theories of social organisation such as socialism, or its variants. I say nothing against such theories, or essay to judge between them, save in-so-far as I plead that the possible realisation of one or other of them in some more or less remote future should not be made an obstacle to the achievement of a measure of mutual aid and service in the actual present. I protest against the social waste or wreckage, the futile strife, which makes an ultimate goal an enemy to a present good. To dream of forms of social reorganisation in which peace and prosperity shall be triumphant is excusable. To formulate reasoned schemes of an ultimately possible millenium is commendable. To refuse to take an immediate and obvious step forward which is practicable, because in some respect or other it falls short of an ideal, is stupid and wanton. The theology which condoned slavery and pestilence by the sedative of a heaven hereafter is not without its parallel in some modern theories which extenuate the gospel of class hatred by a promise of things which may be in some more or less remote future. Let us get down to fundamentals, and endeavour to see how far we can act in the present, with common interest and for common good. I see no sense in shirking this issue. It is to my mind the supreme issue of life to-day.

To pass from generalities to the concrete would involve a more protracted statement than is consistent with the space now at my disposal. A tentative statement, however, may be found in a judgment of the South Australian Industrial Court, **The Trading Bank Clerks' Case** (4 S.A.I.R. 181). I then discussed such matters as **the forms and results of industrial unrest**; the **causes** (such as social unrest due to knowledge, wealth, or pleasures, the war, machinery, and the discordance between political institutions and the methods of business organisations); the **symptons of industrial unrest as suggested by "the wants of the workers"** (such as a higher standard of living, a greater approximation to social justice in the distribution of the national income, reasonable security of employment, and interest in the work done); the **value and limitations of a pre-existing system for the judicial regulation of industrial conditions**; the **proved possibilities of private agencies of social amelioration,** either supplementary to, or independent of, public regulation or supervision; and the **value of co-operative councils for particular enterprises working on a basis of judicial or quasi-judicial regulation.** I venture to quote a few isolated sentences:—

"The most apparent and urgent duty of this Court is to frame Awards in such a way as to encourage particular enterprises to build a superstructure, expressive of the spirit of mutual aid in industry, upon the foundation which the Court lays down.

"If an Industrial Court is to serve the best interests of the community, it must avoid the evil of attempting too much as well as the impotence of attempting too little.

"I propose the constitution of Co-operative Councils, to consist of representatives, not of the industry as a whole, but of particular private concerns. Such Council could be looked upon as Industrial Boards for particular enterprises. Their functions would be to supplement the compulsory terms of an Award by reference to the conditions and possibilities of a particular business."

I do not wish to do injustice to employers. But I must confess to a conviction that the initiative can and should be taken by them. If we are to take the step forward which I have suggested, employers must realise that it is in every way more noble, and indeed more profitable if one must refer to profits, to work **with** men than **above** them. Would employees respond? I believe the vast majority would do so, once convinced of good faith. Until they are so convinced, they will continue to adopt tactics inimical to the interests of all—tactics so much dwelt upon in the daily Press as to call for no elaboration. But when they are convinced, the way is prepared for achievements far transcending the mere attainment of a higher standard of living all round, desirable though that higher standard may be.

VOCATIONAL TRAINING AND THE COMMUNITY.

(Written with exclusive regard to the Vocation Training of Boys.)

(By Peter Board, M.A., C.M.G., formerly Director of Education in New South Wales).

THE relation of education to employment as a problem of immediate application rests upon somewhat indefinite data, though it is at the same time the subject of many off-hand statements. It is often assumed that education is the main factor in determining the distribution of the young life of the community into the various occupations. It is supposed that the increased opportunities for advanced education lead to the overcrowding of the professions, and that certain forms of industry can be more fully recruited by the diversion of a larger number of youths into definitely vocational forms of education.

Before any such assumptions can be accepted as sound, statistics of a much more detailed and comprehensive character than are now available will be necessary. The facts so far ascertainable make the assumptions of very doubtful accuracy.

The circumstances that control the distribution of the boys leaving school among the various types of occupation, are (1) the demand for various kinds of labour or services, as governed by the economic condition of the State; (2) the restrictions which, under legislative provisions, limit access to certain forms of employment; (3) the willingness or reluctance of employers in certain industries to accept boys as learners; (4) the social environment of the boy, which may either open the way to certain kinds of employment or restrict his chances of employment to a few occupations; (5) the choice of the boy limited by all the preceding conditions; (6) the effect of the boy's education upon his qualifications and interests.

In the placing of boys in wage-earning vocations, all these circumstances come into play, and of them all, the particular bias that the boy has received from his education probably plays the smallest part.

Various questions arise in the consideration of the inter-relationship of education and employment. With regard to vocational instruction, it is clear that the training offered to a boy prior to the determination of his occupation must be different from that which follows the decision of his future employment. The question then arises as to the character of that pre-employment vocational training. It may further be asked to what extent does advanced education of the general non-vocational type affect the choice of employment. Also, what is the effect of pre-employment vocational training upon the ultimate choice of occupation? And again, what is the contribution that vocational instruction makes towards efficient citizenship? When it is considered that a large proportion of breadwinners is engaged in occupations that require but little previous training, the effect of education on citizenship is probably the most important of all.

The data required in order to answer these questions are few, and research has not gone far. But the gathering of information that will contribute to these problems is worth while. In the meantime, the school is credited or debited with all kinds of results which inquiry may show have little connection with it.

Looking at the question of the effect on a general non-vocational type of education upon the choice of employment, some facts are available.

It is assumed that boys who receive an advanced general or non-vocational education, such as is given in High Schools and other Secondary Schools, are thereby being recruited for the occupations regarded as professional. The University is popularly looked upon as the destiny of the Secondary School boy, and he must through it enter a profession to which a University training opens the door.

A census has been taken of those boys who left the High Schools to enter employment during a period of twelve months. Omitting those who left school with only one year or less of advanced schooling, information has been gained with respect to 1,515 boys. These had attended for more than one year and up to five years at schools where the instruction they received was entirely non-vocational, without a commercial or technical bias. These are the boys who it is often assumed are, as a result of their education, crowding the professions.

Classifying the various occupations into groups, these boys on leaving school are found to be distributed as follows:

17.7 per cent. continued their education at higher institutions.

10.2 per cent. entered technical professions without passing through the University, mainly chemistry, accountancy, architecture and dentistry.

4.7 per cent. entered the Public Service.

35.1 per cent. entered commercial life, mainly as clerks and shop assistants.

15.8 per cent. entered the trades and factories.
12.3 per cent. are engaged in agricultural or pastoral work.
4.1 per cent. are at unskilled employment.

Of the 17.8 per cent. who continued their education, those who entered the University were only 4.8 per cent. of the whole. The Teachers' College received 5.3 per cent. of the whole.

This analysis entirely disposes of the assumption that these non-vocational advanced schools are merely recruiting grounds from which the professions become overcrowded. Other Secondary Schools have doubtless contributed a larger share of boys to the professions on account of the increased opportunity given by social environment. On the other hand, the small proportion of boys in the above analysis who entered the professions through the University is simply an evidence that the schools have had a selective effect in affording to some capable boys an opportunity that would otherwise have been denied them. These figures show that on the whole the occupational destiny of the boy is determined by the opportunities that the family circumstances opened to him rather than by any special vocational bias created by the education he received.

In order to get further light on the influence which the type of education has on the choice of occupation, the figures with regard to boys who had been attending schools with a definite vocational bias might be considered.

There are two kinds of these schools, one Commercial, and the other Junior Technical, both definitely organised to give a preparatory training for entering either a business calling or a skilled trade, and catering for the pre-employment stage of the boy's career.

In the Commercial Schools, while the instruction is appropriate for boys proposing to enter commercial life, it is valued as a training for all walks of life. The census taken includes 551 boys who had more than one year and up to three years of this kind of schooling. Having left school, they are distributed as follows, the grouping of occupations being as above:—

1.8 per cent. continued their education in other institutions.
6.1 per cent. entered technical professions (not through University).
3.3 per cent. entered the Public Service.
62.0 per cent. took up business occupations.
6.2 per cent. entered trades and factories.
4.9 per cent. entered pastoral and agricultural pursuits.
9.7 per cent. entered unskilled occupations.

In the Junior Technical Schools, when boys get a general training in the use of tools and in the understanding of working plans, preparatory to entering a skilled trade, the census covers 775 boys who left these schools after having attended for more than one year. The occupations they entered were as follows:—

2.7 per cent. continued their schooling.
4.0 per cent. entered technical professions, mainly as chemists and draughtsmen.
2.3 per cent. entered the Public Service.
23.0 per cent. took up business occupations.
49.8 per cent. entered trades and factories.
6.5 per cent. entered pastoral and agricultural pursuits.
11.7 per cent. took up unskilled work.

In these two analyses, the theory that pre-employment vocational instruction mainly determines the future occupation is not clearly established. In the Junior Technical Schools, for instance, only one-half of the boys entered the class of occupations for which their schooling specially prepared them. It is clear that other circumstances previously mentioned as governing the nature of employment came largely into play.

The most valuable result has been that those who did enter the occupations for which their education was specially suited were able to do so with a much better prospect of being interested in them and being successful at them. They had chosen to attend these schools with a previously determined choice of their ultimate calling.

It is a significant fact frequently brought under the notice of those concerned with this subject, that employers who employ boys as learners in an occupation requiring technical skill, seek the boy who by the age of 15 or 16 has had a good general non-vocational education, rather than the one whose previous schooling has enabled him to acquire a useful degree of manual skill, but whose general education has been more limited.

The available facts point to the conclusion that vocational elements in the boy's education exercise a very limited influence in determining his vocational destiny, and that the school is not an effective agency in either restricting or encouraging the flow of labour in any particular direction.

The value of having vocational elements in the schooling does not lie there. Its undoubted value has a purely educational foundation in bringing the boy into direct personal contact with real things and, through his contact with them, enabling him to realise his own powers and acquire interests that may otherwise lie dormant.

Whatever the school might do if it were the sole directive agency in the boy's career, the other conditions which govern the actual entry of the boy into employment are much more potent under existing conditions.

The figures given above do not touch the large numbers of boys who enter employment with no more than a primary schooling, terminating on their reaching 14 years of age. It is the fatal gap intervening between this age and the age about two years later, when employment requiring skill and knowledge is available, that leads many boys into unskilled employment when under other arrangements they might be fitted for something better. For the large majority of these a form of preparatory vocational training would result in both a more productive future for themselves and a better type of citizenship for the State.

In this country, the commencement of the sixteenth year has become the normal age for permanent employment. This article has so far referred to the boys who are under that age, but it is for boys of 16 years and over, that vocational training assumes a special significance.

The Commonwealth Statistician supplies some useful data in this connection.

There were last year 708,048 male breadwinners in this State. Of this number the following percentages are engaged in various classes of occupation:—Professional, 6.9 per cent.; domestic, 2.9 per cent.; commercial, 15.2 per cent.; transport and communication, 11.6 per cent.; industrial, 34.4 per cent.; primary production, 29 per cent.

It is estimated that 17,000 boys reach the age of 16 annually, and enter the ranks of breadwinners. Presuming that the existing distribution of the population among various groups of occupations fairly meets the needs of the State, the above proportions indicate approximately the distribution of these 17,000 boys. Professional and commercial life will absorb 3,600 of them; transport services will take nearly 2,000; nearly 6,000 will enter the trades and industries; and nearly 5,000 will be absorbed by primary production. In the present position of the census it is impossible to say with any precision how many in each of these groups of boys will be engaged in those forms of occupation that call for special training outside of what they will get from actual experience in their job. In all the occupational groups above mentioned, there are positions, many or few, in which instruction and training outside of that gained by experience are required in order to secure efficiency.

Although at this point detailed statistics are lacking, the above figures give a general indication of the kind and extent of opportunity for vocational training which should be available. The extent to which the provision for vocational training, when made, will be availed of by those in whose interests it is made, depends partly on the willingness of the boy to make the sacrifice that training for efficiency requires of him, and partly on the conditions of the employment. These conditions may encourage or deter the boy from getting the training required.

The occupations connected with building may be taken as an instance, as they are largely dependent on the training and skill of the worker. In accordance with the proportion of persons now engaged in them, the building industries should absorb every year nearly 1,000 of the 17,000 boys who annually become breadwinners. The number actually entering these industries is not known, but the frequently published statements of persons interested in this class of work indicate that the number falls far short of this quota.

The reasons for this appear to lie in the conditions surrounding entry into these skilled trades rather than in the unwillingness of boys, either to enter them or to get the training required. On the one hand, employers are unwilling to undertake the trouble involved in employing indentured apprentices. The absence of any organisation for the control of the apprentice, and for securing the fulfilment of the conditions of his apprenticeship, make employers reluctant to employ them at all. On the other hand, the limitation placed upon the employment of apprentices by restricting them to a fixed ratio to the number of journeymen in the service of an employer acts as another deterrent condition, although in some of the trades these limits are not reached. The ratio adopted is presumably based on what is necessary to keep the trade properly recruited and at the same time to prevent an overloading that would result in unemployment. But as some employers engage their full quota of learners, while others engage none at all, it is clear that the industry as a whole will be inadequately recruited. The proposal made by the Board of Trade that the limitation should apply to the whole of the industry, and not to the individual employer should, if adopted, go far to remedy the deficiency, while at the same time the dangers of overcrowding will be avoided.

Whatever shortage exists to-day in the ranks of skilled employment, it is not due to the unwillingness of boys in sufficient numbers to enter the skilled trades, nor is it due to any lack of opportunity for the vocational training of those who enter them. It is primarily due to the conditions governing employment. One of the greatest needs in the industrial system of the State is an organisation that will fulfil three purposes, the bringing together the boy who wants employment and the employer who wants him, the control of learners as far as is necessary to get obligations carried out, and the determination of the number of recruits to various industries to maintain their numerical strength, while also safeguarding the industry against overcrowding, with its resultant unemployment.

When such an organisation exists, the provision of vocational training for skilled employment becomes effective in supplying the army of efficient breadwinners the State requires. Without such an organisation, there is a loss of efficiency in the best conceived schemes of vocational training.

Generally speaking, the best type of citizenship goes with the occupations that call for special knowledge and skill. Vocational training, as general experience shows, carries with it a degree of civic virtue. There remains, then, the further problem of the training for citizenship of that army of the youth, who of necessity enter avenues of employment where no special vocational training is required, and where consequently the attendant civic virtues are subject to the accidents of social environment.

THE GREATEST AUSTRALIAN INTEREST.

By

The Rev. E. N. MERRINGTON, M.A., Ph.D.

WHEN the Editor invited me to contribute an article to the Journal on the Ethics of Gambling, and suggested that the title should be that which is placed at the head of this paper, my mind reverted immediately to a scene in France at the close of the war. After the Armistice was signed the proscription of cameras was lifted; and one bright morning I was taking some photographs of the ruined church at Tertry. Rounding a shattered wall, I came upon a score of Australian soldiers playing "two-up." Their good-nature rose to the surface even above their interest in the game, and they were moving aside to allow the padre to obtain a view of the ruin; but I interrupted their intention by asking them to "carry on," as it was all "in the picture." The background of the French church battered almost out of recognition by the shells of Prussians—the foreground of Australian soldiers backing "heads" and "tails"—with a grim reminiscence of the Crucifixion and the soldiers "casting lots"—all made a characteristic picture, best interpreted with a rising inflection of the lips and twinkling eyes, narrowed at the corners to kindly wrinkles. One "accepted the universe"—in Margaret Fuller's phrase—such as it was, in the clashing extremes of those times; perhaps because of the logic of Carlyle's rejoinder to Margaret's concession—"Gad, she'd better!" Everyone who knew anything of the war knew that the clause in King's Regulations which prohibits gambling in the army was interpreted as dreams used to be interpreted—before psycho-analysis became popular—namely, "by contraries."

It was not really left to the war to show the proclivities of Australians in these directions. Australia is more English than the English in some ways, and the greater vogue of "The Melbourne Cup" than even "The Derby" in the respective countries is a case in point. The most patriotic of Australians who form an honest estimate of our character will admit that gambling has a powerful grip on the people of the continent. To the traditional practices of betting and gaming, various other rites of Chance have been appended, sweeps, lotteries (legalised, if not under Government patronage), art unions, and what not. Australians are interested in many things and major things; but, in the mass, they are pilgrims to the shrine of Luck.

There is much in our conditions of life to account for this predilection. The colonists were of adventurous stock,

"That ever with a frolic welcome took
The thunder and the sunshine, and opposed
Free hearts, free foreheads."

Emigrating, pioneering, mining, selecting—in short, all the main activities of life in a new country savour of risk and hazard. In the language of the youth of the world they are "just one big gamble." Add to these the contingencies of fortune or bankruptcy, the part played by droughts, floods, bush-fires and the pests which are so prolific in our great virgin territories, and you have the suitable environment for the gambler.

Then sport comes in—racing, with its ancient associations of betting, the fascination of the horse and his lineage, the rival prowess of man with man in athletic contests, and the eager interest which the anticipation, the suspense of uncertainty, the meeting, and the verdict arouse, as well as the creation of the next "circle" of speculation regarding the subsequent challenge and its result; and you have a remarkably resourceful stream of pleasure for the enthusiastic devotee of such modes of recreation. But this preoccupation with the game itself is not enough: the element of backing one's fancy comes in, and it completely overshadows the simple issue of victory by the best competitor. So strongly does gambling invade sport that, whereas sport *per se* should rejoice in the triumph of the fittest, in modern estimation it is joined with the hazards of "odds," and the financial accompaniments of the race or contest in question. The tendency is for gambling to dominate the whole meaning and practice of sport.

The factor of skill, speed, strength or ability which is the soul of manly sport is eliminated more and more by the admitted play of chicanery on the one hand and mere chance on the other. The confessions and exposures of fraud in connection with horse-racing and its attendant "rings" are sufficient evidence of baneful influences at work in that form of "sport" which monopolizes most of the attention of the public and most of the space in our newspapers. But the recruiting of the army of gamblers is mainly done by other agents of Chance. In the street, in offices, in factories, even in schools, the influence of the Lottery and the Art Union is felt. Sweeps and syndicates, which include the easy-going multitudes of young people who furnish a silver coin to the common stock, flourish on every hand, and train up our children in the way in which they should not go.

It is well known that opinions differ regarding the ethics of gambling. The law of property is interpreted so literally by some as to give an absolute right to the individual to do whatever he likes with his money. Further, the uncertainties of life, the risks of fortune, the speculations of the Stock Exchange are quoted as condonation for staking something on a race or a prize. Marriage is a lottery, we are reminded; there is risk in every stage and enterprise of life and death; therefore we are fully justified in investing our means, or, at least, some trifling fraction of it, in any hazard which pleases us.

Acting upon this suggestion, one may "hazard" a question. Why stake only a trifling fraction? If life is all a chance why not invest all in one big gamble? The reply is obvious. Prudence forbids; we might lose all, and jeopardise the interests of those who are depending upon us! But what has prudence to do with the case? The defence of gambling is based on rank Individualism. To go beyond that is to alter the major premiss on which the argument is founded. It is to recognise the principle that wealth or property is a social trust. That will carry us far in ethics. We are our brother's keeper. The common welfare must be our ultimate law.

Further, we are not free to do as we like with our money. We may not fill a crucible with golden sovereigns and melt them into ingots with the law's permission. We may not export the precious currency save under certain restrictions. We cannot even leave our savings to our children without the State's imprimatur, probate and death duties. Our claim to gamble because we own is seriously impugned by the social order in which we live. And rightly so, because even ownership implies use and obligation. We do not really possess what we cannot properly use; neither do we convert our personality into a strong-room for hoarding, gambling and the like. The taxation of Australians is oppressively heavy since the war; but it is the unconscious philosophy of the gambler, the profiteer and the Bolshevik which has yoked this burden about our necks. It is an unnecessarily painful reminder that "we are members one of another."

The most extraordinary development of "democracy" in our Australian States is to be found in our undemocratic patronage of gambling. The British Parliament not long ago refused to establish a lottery to assist in defraying the huge war debts. But we find the Home Secretary of a State like Queensland, with a Labour Government in power, admitting to a deputation on the subject of gambling that

"The Golden Casket is now a matter of Government policy"! This lottery, with a first prize of £5000, is fathered by those who represent the more equal distribution of wealth and a premium on production! Gambling is opposed to the first principles of democracy. It rewards in the most inequitable manner, viz., by chance, those who have done nothing to produce such wealth; and, to do so, it takes the hard-earned money of the many to enrich the few. It elicited from the able Governor of the State the protest that he did "not for a moment believe that charity need seek support from the crooked arm of ugly hazardry." The idea that the support of hospitals justifies resort to questionable means of raising money is another ethical and economic fallacy which can easily be exposed. The true wealth of a nation is the character of its citizens, and whatever mars that is the hugest debit to its moral and ultimately economic estate. The foundation of financial credit and stability is confidence. Integrity is the final asset in business relationships. Character is the gold reserve of the Commonwealth.

And it is because gambling destroys character that it is one of the worst foes of the State. Ethics and economics are closely connected. The effect of gambling is not merely to produce a habit of excessive indulgence, but to slacken the driving wheels of industry and initiative. It paralyses proper energy and distorts economic standards. As Francis Bacon said, "A gamester, the greater master he is in his art, the worse man he is." All experience goes to show that the hardened and inveterate gambler is dehumanised of many noble qualities.

The late Professor William James, of Harvard, suggested the application of the "Pragmatic Method" to difficult problems of philosophy. What difference would it make to human life if each alternative in turn were regarded as true? What is the practical value of the distinction between the affirmative and the negative? This test is useful in settling many age-long differences in ethics and metaphysics, and even in economics. The tendency of our time is wholly in favour of its application. Prohibition of intoxicants made little practical progress until the moral and sentimental arguments in favour of abstinence were subordinated to the aspects of national efficiency and economic welfare. Then it advanced in the countries where it was put to the actual test by leaps and bounds. So with public health and hygiene. The old adage "prevention is better than cure" is now a sacred and inspirational watchword of applied science. The belated efforts of the family physician are wholly subordinated to the campaign against epidemics. The eradication of fruitpests is less essential than the destruction of breeding-grounds and the prohibition of infected materials. What is the economic effect of gambling? In James's vivid and terse phrase, what is its "cash value" to the community?

1. It is detrimental to sport, its happy hunting-ground. The emergence of financial interests in physical contests is a serious menace to our modern substitute for war—viz., sport. It creates a crowd of most unsporting parasites, who are a drug in the economic, social and ethical market.

2. It is bad for business. Engrossment in betting and lotteries is a distraction from the interests of employers and employees. Thefts and embezzlements are usually consequential upon transactions of hazardry.

3. It is the antithesis of industry. Laziness and ineptitude settle like a pall upon the gambler. "The Dignity of Labour" ceases to apply to those who are inured to wait for the lucky win. A non-productive horde who serve no public interest whatsoever grow up like weeds in the community where gambling is rife.

4. It is opposed to the ideals of education and culture. It unsettles the attention and the will. The widespread sale of "Golden Casket" tickets and the periodical publication of lists of horses and of the winners of prizes tend to divert the minds of the young from study and preparation for a life's vocation. The values of toil and of time are disregarded as obsolete in view of the possible and spasmodic movements of the hand on the dial of fortune. The lottery is the training-ground for the race-course and the betting shop, and is a deterrent from sustained and patient labour with brain or sinew.

5. It is an abettor of crime and immorality. In public affairs hypocrisy is engendered by the patronage of gambling in the form of lotteries and sweepstakes. The raids on betting shops and Chinese gamblers are inconsistent with the encouragement of the sale of lottery tickets. The same pernicious spirit of make-believe is created by the plea that the appeal to chance is justified in the interests of philanthropy. The low ethical standard of the permission of evil for a supposedly good end is inculcated by these practices. It is suicidal to sacrifice character even for the maintenance of hospitals, when there are other ways of securing those ends, for instance, by direct taxation if need be, rather than by teaching the young to gamble.

The criminal records prove how great is the moral and social evil brought about as the result of gambling. The devices to get suddenly rich without effort or ability are ruinous to the character of the citizens. The ideal of honesty and solvency are forfeited by the wild and unprofitable speculations of the race-course, and many a career of crime is thus begun.

How is this vice to be curbed? How are the life interests of so many of our gamblers to be re-adjusted? Merely destructive and denunciatory criticism is futile. There must be a positive and educational development in Australia to combat the barrenness of mind indicated by the love of hazardry. The public-house must give place to some institution more worthy of the twentieth century. All true education is a remedy for the evils of vacuity. There is a paucity and an impotence about the national interests and values when so many can employ themselves to no better purpose than in the artificial excitements of cupidity dependent upon the vagaries of Luck. It is a national condemnation, and a challenge to idealism that we are like to degenerate into a nation of gamblers.

Art is the ally of true education. The devotee of the beautiful will live a fuller, richer life than the captive to the lures of chance. Our standards of taste are still deplorably low, especially in the congested areas of cities and in the remote towns and villages of our vast demesne. The love of music is a power for progress in our community. Even the pianola and the gramophone may serve high ends in raising the standard of recreation. The use of wireless for the dissemination of music in remote parts of the country would regenerate the recreational life of the dwellers in the "never-never." Our finest concerts could be broadcasted by this instrument over wide areas. If better music were heard and loved throughout the length and breadth of the land, people would not waste their evenings over interminable card-parties and banal forms of excitement. The picture-show may become an uplifting force. It has helped to supply colour and variety in many lives spent in monotony and drudgery. But we need better pictures with better plots and better advertisements if the standard of recreation is to be raised. The educational and recreational value of the film has scarcely been estimated or attempted as yet. Our universities, scientific societies (e.g., the Royal, Royal Geographical, and Australasian Association) might disseminate much popular educational matter through the cinema.

All such more or less indirect modes of combating the tendencies to absorption in the lower forms of social life are subsidiary to the frontal attacks by the forces of legislation and of religion. Parliament must set the example by linking up ethics and politics. The transport of all mail-matter connected with "Tattersalls" and other sweepstakes should be disallowed by the Federal authorities. The prohibition of "Tattersalls" should be extended to Tasmania, the one State which shelters this disturber of progress. Publication of betting odds and information connected with gambling should be prohibited, throughout the Commonwealth. The newly-elected members of the Federal Parliament have an opportunity to do something to aid in the fuller development of a moral and civic spirit among our young Australians. State Lotteries and "Art-unions" should be suppressed, instead of being patronised, as at present in Queensland, and probably elsewhere in the States. The "Art-union" is a complete misnomer. It was originally intended to assist artists in disposing of their work by the method of a raffle. It has degenerated into a mode of raising money for all sorts of purposes. An inspection of the balance-sheets for many of these "Art-unions" would be interesting. The amount allotted to "expenses" is in many instances quite out of proportion to the "proceeds" in support of the much advertised object of charity or public benefit. The whole business has grown enormously, and is now a scandal to the national character and a menace to our future. The "Crown" which raids and prosecutes gamblers in betting-shops with righteous, if spasmodic, zeal to-day, is to-morrow and all the time promoting lotteries and permitting "Art-unions" which are producing an annual crop of young gamblers in the community. Let us be consistent—or as nearly so as possible—in this matter.

The education of our people is founded upon a religious basis. The close relationship with the ideal in life comes primarily through religion. The filling of the empty heart with worthy interests is accomplished mainly by a vital and ethical faith. The churches are commonly, and sometimes unfairly, regarded as the sole custodians of morality. It is a scandal that all the churches have not been scrupulous in regard to the modes of raising money. The churches must have clean hands in the matter of gambling if they are to inculcate that love of righteousness which exalts a nation. There has, however, been a searching of conscience in this connection, and the ideals of national life are being more earnestly examined and proportionately refined. If gambling is to decline through the creation of greater popular interest in weightier and nobler matters, it will be through a closer alliance of religion, ethics, education, art and civics, and a consequent advance in the supreme art of life.

FROM THE EDITOR'S CHAIR.

A Philosophical Journal is always an adventurous, and rarely a remunerative undertaking. The Australasian Journal of Psychology and Philosophy runs a special risk, for it addresses two audiences, and may fail to satisfy both. Some of the articles are on subjects of technical interest, written by experts for experts, or for a limited number of professional students. Other articles will treat of topics of universal interest, ranging from the high metaphysical quest of the secret of the Absolute, to concrete problems of social and political ethics. The Journal will not be the organ of any particular school of philosophical thought. It will not be made the vehicle for any kind of propaganda. It will not scorn the old fogey in Philosophy, or disdain the new faddist, although it may criticise both. In England and America, the technical and the humanistic or universal interests are represented by many different types of scientific and philosophical Journals. In Australia and New Zealand, until specialisation shall have increased with greater differentiation of studies, and until increase of population shall have brought with it a greater body of cultured opinion, interested in the things of the spirit, one Journal must attempt the double task. In doing so, it runs, as we have said, a double risk. It may be too general to satisfy the few. It may be too technical to interest the many. But unless it undertook the twofold task, it would not survive the year. The small band of promoters accept the risk, in the hope that sufficient initial support may be received from Australasian students of Psychology and Philosophy to justify the adventure.

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Between the uneducated and the educated public, there is the greatest public of all in the democratic state, the half-educated public, not Ibsen's damned compact majority, but an amorphous mass of instincts and interests, hopes and fears, prejudices masquerading as principles. It constitutes perhaps the greatest difficulty and danger of modern democracy, although under ordinary conditions, the danger is diminished through the restraining and guiding influence of a free and enlightened public press. Ruskin, in one of his many reckless utterances, dismissed the newspaper press as so many leagues of dirtily printed falsehood. But neglecting certain lewd fellows of the baser sort, the public press of to-day represents for the most part, a great and honourable company of distributors of knowledge, who have a sincere love for what is honest and true and of good report, and an unselfish desire to promote the welfare and enlightenment of society. To this honourable company we would join ourselves, for, in spite of division of labour and diversity of function and gifts, we all belong to the great working army of middlemen, through whose labour the thoughts and achievements of the few become the common and permanent possession of the many.

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The modern democratic community is safeguarded from the worst results of extravagances and extremes, (the extravagances and extremes themselves we shall always have with us) partly as we have noted, by the existence of a free press, and freedom of public discussion, through which absurdities and errors neutralise if they do not cancel each other; and partly by the existence of a kind of court of appeal, constituted by a cultured minority of trained minds and liberal spirits. There is no visible seat of authority. Disputes and differences of opinion may abound. But in every department of thought and life, there are always **the men who know,** and in matters of knowledge at least, sooner or later the still small voice of the man who knows may be trusted to overcome the loud, blatant utterances of dogmatic authority, appeals to ignorance and superstition, prejudice and fear.

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In matters that directly affect practical life or economic well-being, men can generally apply scientific methods of observation, induction and deduction. They can test and verify assertions and theories, without being acquainted with technical rules and canons, as formulated by a logic of scientific method. Common sense, which is simply the spontaneous working of reason in dealing with the ways and means and ends of ordinary life, can generally be trusted to take care of itself. Only when common sense attempts to explain its own explanations, does it require to be taken of, for then it takes the field as an uncritical science and philosophy, and as a result is found very often on the wrong side of the line separating sense from nonsense.

On questions that turn on what is called truth of fact, the actual nature and constitution of things and the causal order of events, there is no permanent or final authority save the truth itself, and that means simply its power to prove itself true when tested by the ever-widening knowledge and growing experience of mankind, and things being what they are, consequences will be as they will be.

But men cannot rest content with the actual, or be satisfied by an economic well-being, however rounded and complete. And so Religion, Art, Philosophy, are born. And so they will continue, permanent human interests, to be man's fascination and his despair. Naturalism, Scepticism, Agnosticism play havoc with the philosophies of the schools. Philosophical theories pass, Philosophy remains.

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Each generation seems to have at least one main centre of speculative interest, as well as a number of competing subordinate centres in which the scientific and philosophical interests are often conjoined. The variety and multiplicity of philosophical thought are in modern times more apparent than its unity. Superficial critics sometimes regard this as a proof of the futility of Philosophy. It really shows its vitality and the many-sided nature of the philosophical problem. Science cannot escape philosophy, although the specialist, busied with his particular task, may be justified in ignoring its philosophical implications, or treating them as irrelevant. A discovery in physics or biology, may have, when stated in the language of scientific theory, metaphysical implications which take us far beyond the original apparently "simple fact." From **fact** to **explanation** of fact, and then to the **significance** of the fact in its bearing on general theory of the universe—these represent the stages in which the mind passes from ignorance to knowledge, or rather, from one kind of knowledge to another, or from one kind of ignorance to another.

The uncritical mind is still amazed with great amazement over the implications of an alleged new and simple fact in astronomical science. Indeed most of us, trained and untrained minds alike, are more or less ignorant in regard to the Theory of Relativity, in which an old problem is stated in new and startling terms. Two articles in the Journal deal in a suggestive way with different aspects of the problem. Other articles will follow in later issues. But until the disputes arising from the scientific discussion of the "facts" have come to an end, the significance of their philosophical implications cannot be adequately brought home to the ordinary uncritical mind. When authorities like Poincaré and Painlevé differ as to the nature of Time and Space, common sense may be excused for its failure to understand the true inwardness of the problem. That Time and Space are not real in the sense of being entities, things with an existence and structure of their own, but **immanent,** in the sense of being properties or relations between properties of things, seems a hard saying. Yet common sense would find it still harder to imagine what reality, what thing or entity would be left to be called Time or Space, if matter and energy, things and their properties, were to vanish from the universe.

The physicist has hitherto been content to speak of space as a medium in which gravity acts, without indulging in speculation as to the nature of the reality of space. Some critics are in doubt as to whether Einstein and his followers are not in danger of relapsing into the bad metaphysic of common sense, in seeming to endow space with a reality of its own, in virtue of which it becomes not a passive medium in which gravity takes place, but the active agent of the transmission of gravity.

At this point, the field seems prepared for the Idealist to enter with his unsparing logic and play the merry game of criticism of categories. Lord Haldane came on the field with a rush, and left with a rush; but the arena is still waiting for the trained philosophical athlete, skilled in the manipulation of categories, to play the great game of critical metaphysic once again. Royce and Croce have been the last great exponents of the game, although the latter has a worthy successor in the distinguished Italian logician, Bernardino Varisco, author of **Conosci te Stesso,** and **I Massimi Problemi.**

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Einstein has a much stronger grip of the philosophical implications of his theory than some of his critics are willing to admit. In Epistemology, as he himself tells us, his filiation is with Hume and Mach, and in one of his earlier writings he makes the significant remark that the principles of Mathematics (the particular reference is to the axioms of geometry) in so far as they refer to reality, are not certain, and in so far as they are certain, have no reference to reality. Still, Einstein has hitherto refrained from dealing in a systematic way with the ultimate problems which Bergson attacked with characteristic *elan* in his **Creative Evolution.** Time and Space in the Relativity Theory, at once suggest the problem of their relation to Causality, and any adequate treatment of Causality in its turn opens up the metaphysical vista of Cosmic Order and Evolution, the Infinite and Absolute. These were the high themes of Bergson, more magician than metaphysician. He began by rebuking modern thought for its excessive and devitalising intellectualism. The indictment was, in more specific terms, that to explain a dynamic universe in terms of the logical understanding, was to replace the real world of life and movement by a sham world of abstractions, a shadow world of general laws and schematised relations, since the tendency of the logical understanding was to conceive and describe everything in terms of the spatial and the external.

Bergson condemned the intellectualised world of modern thought almost as unsparingly as a Bolshevik condemns the sinful capitalised world of modern civilisation. When he passes from criticism to construction, the charm of his style and the wealth of his imagery half conceal, while they half reveal the fantastic architechtonic. The building goes up to the sound of sweet music. To some, Bergson is simply the last great prestidigitateur on the metaphysical stage. To a less unsympathetic criticism, he is a great imaginative artist, a Platonic poet-philosopher reincarnate. The Bergsonian Duration (la Durée) appeared to the philosophical world of the time as a kind of deus ex machina, clad in glittering robes of Bergson's manufacture. His conception (or vision) of two streams of tendency, to apply Arnold's phrase, an upward current of spirit meeting a downward current of matter at a given time and place, and giving rise, hey presto, to life, is magnificent—but it is not philosophy, and certainly it is not science.

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Bergson and Eucken were the two bright stars shining in the philosophical firmament of the last generation, but with different degrees of intensity. Bergson's brilliant light no longer dazzles sober thinkers. The milder lustre of Eucken has been dimmed to some extent by the mephitic vapours of war. But recent events have only strengthened the faith of the great German Idealist in the principles which have inspired his teaching. His recently published Recollections will interest his former students and the wider audiences he has won for himself in the old world and the new. They receive sympathetic notice on another page from the distinguished translator of some of his previous work.

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The latest Monograph published by the Association of Psychology and Philosophy (Dreams, by H. Tasman Lovell, M.A., Ph.D., Associate Professor of Psychology, University of Sydney) will have a special interest for those who find it hard to discriminate between the true and the false, the rational and the irrational, in current doctrines of Psycho-Analysis. The next issue of the Journal will contain a series of articles on Psycho-Analysis from various points of view, including the educational, medical and religious. Meanwhile, Professor Lovell's Monograph will be welcomed as the first systematic exposition and criticism which has appeared in Australia. Unfortunately, a new truth or new aspect of an old truth, is often exaggerated and made to appear ridiculous, by well-meaning but ignorant advocates. The uncritical reader is impressed by the copious use of quasi-scientific language. Even Coue, who ought to know better, tells us that the force of the imagination is "in direct ratio to the square of the will." The utterances of the latest doctrinaire and the confessions of neurotic patients are quoted and accepted as if they were unquestionable data of scientific observation and verification. The great half-educated public is always a happy hunting-ground for the charlatan in Science, Philosophy or Religion. Testimonials will pour in like the following, taken from the chief authoritative production of the Christian Science School:—"It seemed to me from the first, that it was something I had always believed, but did not know how to express." "I was healed of ulceration of the stomach, a restless sense of existence, Agnosticism, etc.' '

An American journalist writes:—"After reading Freud and Jung, we do seem to need a policeman in the basement. Once only a storeroom, the Subconscious has become the seat of morality, the custodian of health, and the arbiter of fate. Whether friend or fiend is uncertain; it knows no rest, and does its work while we sleep. The way to control it (it is said) is by auto-suggestion, i.e., becoming temporarily monomaniacs, saying a thing over and over like beating a tom-tom, until the unconscious mind gets the idea. . . . . What fads people will take up, willing to turn themselves into automata rather than undergo the effort and discipline needed to organise the inner life. Surely it is not the Subconscious but the Divine Conscious of which we must lay hold if we are to live in 'the glory of the lighted mind.'" (**J. F. Newton in Atlantic Monthly**). Such cricitism is provoked by the extravagant claims made on behalf of the "new teaching" and the "latest scientific thought." "The Unconscious (we quote from a recent Quarterly Review) would appear to be a region resembling the Zoological Gardens with all the keepers on strike. A host of unnoticed and unsuspected desires and passions are constantly roaring and raving in their cages. And the only hope of peace for the unfortunate patient is for the psycho-analyst to open the cases and set the inhabitants free." Now when the inhabitants of the cages are let loose, what happens? What is most likely to happen is that one or both of the primal instincts, the selfish and the sexual, will take command, and that the lack of control by the self-conscious Reason, or by those personal and social inhibitions which poor humanity has established for protection against its own weakness and brutality, will lead inevitably to mental and moral degeneration, if not disaster.

The two greatest mistakes made by so many of the self-appointed leaders and credulous dupes of the "new thought" are these. In the first place, they look for the real self in the raw material or stuff out of which personality is built up, forgetting the other and still more important aspect of the truth, that the highest is the measure of the man, and that "a knowledge of roots gives us no adequate knowledge of fruits." Secondly, and as a pedagogic consequence, the natural and the moral are confused in practice as well as in theory. The return is easy to the pernicious doctrine that the natural desires as such, are their own sufficient justification. Only a homeopathy gone mad, would recommend such a doctrine as a remedy for the tumultuous moral and spiritual anarchy of our times.

Professor Lovell's Monograph may be recommended to those who wish to become acquainted with the scientific and saner side of Psycho-Analysis.

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The article on Vocational Training deals with a problem of vital importance to every democratically governed State in which selfish individual and sectional interests prevent many of the governors from taking long views or thinking and acting for the good of the whole. Many Trade Unions in effect legislate against the youth of the community, and the future welfare of their own special trade. Such short-sighted action is no doubt due in part to ignorance, and both employer and employee have still much to learn with regard to the complexity of social causation, in which economic factors are by no means the only ones to be reckoned with.

Now that Mr. Board has ceased from his varied activities as Director of Education, he will have more time to devote to the higher criticism, for which he is much better qualified by his long experience, than the multitude of academic and amateur councillors and critics of our educational systems. The highly centralised systems of education in Australia have no doubt certain advantages as business organisations, but they have also corresponding disadvantages, especially as contrasted with the New Zealand educational system, which encourages local initiative and co-operation. It has been the special merit of the N.S.W. Department, under Mr. Board's rule, that the interests of education have never been sacrificed to the demands of a narrow bureaucratic efficiency. The old notion was that every teacher was or should be as good as another, without regard to diversity of gifts or necessary differentiation of function. Every peg was supposed to fit any hole. Mr. Board was a Radical Empiricist in Education, and gave a short shrift to many of the old educational fallacies and prejudices.

One interesting educational experiment in New South Wales has already been described in the daily press, and need only be noticed briefly here. Mr. W. A. Thompson, a State school teacher, and returned soldier, discovered that his gifts as a teller of fairy and other tales were much appreciated in children's hospitals. He is now known as the Story Man to thousands of children in N.S.W., and doctors and nurses have come to regard him as a valued therapeutic agent. And, wonderful to relate, the Department of Education actually released him from his routine tasks, in order that he might give his whole time to the development of his new job, with results which are very interesting in relation to the mental, moral and physical health of the child. Under the old regime, he would have been sent back at once to his proper educational task of teaching the 3 Rs.

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According to the American philosopher, Santayana, the function of Poetry is to emotionalise Philosophy. Philosophers should try to get rid of the bad habit of instructing the poet as to his function and mission. The mission of the poet to the philosopher is to please the philosopher, and therefore we print, without further comment, the verses which one of our own poets, Dorothea MacKellar, has been kind enough to send to the Journal:

EARTH.

Earth puts forth a mingled crop,
   Trees and cities, straight-limbed men—
Shoot and flourish, bloom and drop:
   She receives them all again.

Never greedy, never full,
   She is patient, for she knows
Nothing can escape her pull,
   From the mountain to the rose.

Rocks beneath the air's soft kiss
   Crumble to fertility;
Earth takes back Persepolis
   And the late-born butterfly.

Dust am I that will not rest—
   Pray you, wind, cease not to blow,
Ere she take me to her breast
   There is much of earth I'd know.

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Every year a little band of young men and women leave the Universities of Australia and New Zealand, to pursue their philosophical studies in England, America, and on the Continent of Europe. Many have gained honorable distinction while abroad. Some have returned to be Professors or Lecturers in their old Universities. In a few cases, death has brought promising careers to a premature close. Miss C. C. Braddock was a distinguished student and graduate in philosophy, of Victoria University College, Wellington, New Zealand, who afterwards undertook post-graduate work at Cambridge and Cornell Universities. She died of influenza at Cornell. We print a few passages from a paper she wrote while still at Wellington, on the Stoic Attitude.

THE STOIC ATTITUDE.

By C. C. BRADDOCK.

"To have no wants at all," says Socrates, "is godlike; to have as few wants as possible approaches the godhead." It was this aspect of Socratic teaching that the Stoics followed. But examine it. Destroy wants by destroying desires! Destroy emotions, by preventing any expression of it! Truly a Jamesian method, but indeed a diabolical one. How destroy the expression of emotion without violating the very innermost soul and life of our being? "To desire things impossible is the part of a madman," says Marcus Aurelius. Then am I mad? I err in good company, for indeed all reformers, many philosophers and poets, have desired the impossible. Probably they themselves often thought that what they desired was impossible. And here is the mountain of comfort that M. Aurelius would offer in place of such desires. "Thou must comfort thyself in the expectation of thy natural dissolution and in the meantime not grieve at the delay; but rest contented in these two things. First, that nothing shall happen to thee which is not according to the nature of the universe. Secondly, that it is in thy power to do nothing against thine own proper Good and inward spirit."

Poor, world-weary man, in a spirit of resignation waiting for death. You are half dead already, if you possess no power to suffer. A living form that lacks a soul, a house that has lost its tenant, you live on, expecting nothing, hoping for nothing, enjoying nothing but the prospect of death. The Stoic attitude is after all a timid one.

"Write on your door the saying wise and old,
Be bold, be bold, and everywhere be bold;
Be not too bold, but better the excess
Than the defect; better the more than less."

To be strong is to be happy; weakness is the child of unhappiness. Boldness is therefore the virtue to be sought diligently. But to have boldness there must be some pushing, driving force. This can be found only in emotion. "Without passion man is a mere latent force and possibility, like the flint which awaits the shock of the iron before it can give forth its spark." Surely this is more inspiring than Stoicism and without inspiration—in its essence, emotional—life is impossible.

But what does Amiel mean by passion? Passion for what? There lies joy or sorrow, pleasure or bitterness. Rather must we seek to convert sorrow into joy by directing passion aright. Given the passion, the motive force (the mill stream) right direction (a mill wheel to turn) is necessary. Thus only may passion fulfil itself and seek satisfaction. The Spinozistic doctrine of substitution is more psychological than that of the Stoics.

But such a doctrine might be wrongly interpreted. If after sustaining a loss I am satisfied with a substitute, am I not like the child who is made happy by the new toy in place of the broken one? Joy is to be gained not by mere substitution such as this. It should be found not by refusing to face sorrow, but by the worship of ideals. The trouble is that ideals seem rather cold and far away at such times. In any case it is ten thousand times more noble to drink the cup of grief to the very dregs, bitter though they be, than first to destroy the sense of taste and then to drink. After all, emotional experiences are interesting, terrible though they be. Why is it that Amiel's meditations attract us more than those of M. Aurelius? Simply because the one is the story of the struggle of a human heart, the other the story of the struggle of the human reason. In the one we are led over high, snowy mountains and down into dark valleys, rushing cascades roar, and we hear in the distance the dull rumble of the falling avalanche. In the other we traverse a broad smiling plateau, always the same sunshine and the same bracing wind. The latter we admire; the former seizes us and forces to admiration in spite of ourselves. It moves us to delight and wonder, to awe and tears by turns.

Yet strange to say Amiel himself was unable to make use of the extraordinary motive force latent within him. Conflicting passions raged like storms, destroying each other and resulting in a wanton waste of energy and left him pitifully bare of action. Thus he tries to introspect his restless feeling: "This restless feeling is not the need for change; it is rather the fear of what charms me, the unrest of happiness. What a bizarre tendency and what a strange nature—not to be able to enjoy anything simply naively, without scruple, to feel a force impelling one to leave the table for fear the meal should come to an end."

Then he decides that, Endymion-like, he seeks impossible ideals "so that it seems to me as if my love of movement, which looks so like inconstancy, was at the bottom only a perpetual search, a hope, a desire, and a care—the malady of the ideal."

Such opposition of self to self must necessarily mean inhibition, contradiction, and what seem to the practical but foolish exhibitions of passion. "Life indeed must always be a compromise between common sense and the ideal"—this is the true and it seems to open the pathway by which some escape from the problem of how to bear affliction may be realised. Compromise ranks with mediocrity as an unpleasant but perhaps a necessary evil. Having uttered this protest against it, I am free to proceed to use the method.

The English have a great admiration for the Stoic attitude. To bear trouble without whining, not to be too servile or humble to superiors, to be pleasant to friends without giving away your heart, to be pleased rather than enthusiastic, not to speak of deeper problems of life, but to accept life as it comes, all these are characteristic of the Stoic attitude. "To endeavour to have power of myself and in nothing to be carried about, to be cheerful and courageous in all sudden changes and accidents, to love mildness, moderation and gravity, and to do my business, whatsoever it be, thoroughly and without querulousness"—such is the ideal Stoic, the man who can outwardly perform his duties and obligations calmly and serenely, and in his inmost soul await only death. Truly the outward form is admirable, but the inner temple bare and empty. Yet such an outward attitude would be a useful one to assume, not in an hypocritical way, but from a common-sense point of view. After all, there is only this attitude left as a possibility for an emotional soul—to cover itself in such a cloak of reserve that no one who might fail to appreciate these inner forces should know of them. "To surrender what is most profound and mysterious in one's being at any price less than that of absolute reciprocity is profanation."

The wonder to me is not that people have so little self-control, but that they have so much; not that they are such poor Stoics, but that they can be such good Stoics as they are. People suffer and smile bravely; half their world is swept away, and yet they live the ordinary every-day life, talking of common things. Do they really suffer? Am I such a fool that I cannot do as other people do? is the question that arises. Then, too, the world has enough of its own troubles, and does not want mine. It is, in fact, a failure in one's duty to others to impose sorrows, even on one's nearest and dearest friends. It is because the English are on the whole an unemotional race that in comparison with the races of the Continent so few suicides take place in their island home. The German thinks too deeply, the Italian feels too deeply to be able to bear adversity with fortitude. The Englishman has too much conceit, positive self-feeling, "thinks too much of himself" to be able to fall into the depths of sorrow reached so easily by more emotional races. To preserve a due harmony, to see things in their proper proportion implies freedom from the terrific storms of passion that afflict the soul of the passionate. One curious thing which has some ethical significance might be noticed in a crisis or an emotional display of any kind. The selves are scattered hopelessly and beyond recall; habits may disappear and new ones be formed. This is similar to the phenomenon of conversion. In both cases old pathways are broken down and new ones blasted. For a long time after the scattering of selves in an emotional display one finds new gaps and wounds where pieces of oneself have disappeared, and one must set to work to look for them in order to build up the whole again and present something like a united front of selves to the world.

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REVIEWS.

RUDOLF EUCKEN—Lebenserinnerungen. Koehler, Leipzig, 1921.

(tr. by Joseph McCabe, under the title of Eucken, His Life, Work, and Travels).

These reminiscences make a quite particular appeal to those who have already learnt to love and respect the great-hearted thinker of Jena. It may possibly bore the expert who is looking for fine-edged distinctions and detailed analyses, and misses the great thoughts which fortify life at its basis and give the proper standpoint for all judgments of detail. There may be some, again, who cannot see the thinker through the prophet's mantle, and yet others who cannot see the man through the patriot. But if these prejudices of outlook can be overcome, there is much in the book from which philosophy can abundantly profit.

A most valuable feature of this small volume is the clearness with which the author singles out, as occasion offers, the essential features of his own philosophy. We learn that it is fundamentally an ethical (p. 67) and a personalistic philosophy (p. 74), and that it is anti-intellectualistic in the sense of distrusting what the intellect can give when detached from the plenary inspiration of the spiritual life. The great objects of philosophical study are the great movements of the life of humanity—the Ancient World with its worship of Form, Christianity with its profound and inward grasp of the personal springs of action, and the Modern World with its devotion to Power and Efficiency (p. 107). Each of these main currents has its own typical development of science, art, religion and statecraft, and the key to their import as stages in the world's inner history is to be found in Activism, in the prophetic call to spiritual action clarified and consolidated through the rational appeal of philosophy, and aiming at a Kultur which will express what is most universalistic in our personal nature (Ein Kultursystem des universalen Selbstlebens, p. 75). The great gift of life and light must be fought for. Not strife indeed, but the struggle for spiritual existence is the father of all, and the great matrix also in which souls and selves take shape as they should.

And yet this activist who writes (p. 78) that "our human life as a whole bears as its very hall-mark the sign of conflict," closes his volume of reminiscences with the words: "Thought and Love are still with me, and I need nothing further." (Mir bleibt genug, es bleibt Idee und Liebe, p. 118). It was da Vinci who said that we can truly love only what we know, Pascal who held that we can truly know only what we love. Eucken would agree with Pascal, but for him love is the parent of strife itself, the power that inspires the world's unyielding quest after self-discovery and self-knowledge.

W.R.B.G.

ENGLISH AND AMERICAN PHILOSOPHY SINCE 1800.

By A. K. ROGERS.

Macmillan, 1922, pp. xiv., 468. **Our copy from Angus & Robertson.**

Beginning with Scottish Realism, the author discusses in successive chapters The Utilitarians, Authority and Reason in Theology, Naturalism and Evolution, Absolute Idealism, Personal Idealism, Pan-psychism and Realism, Pragmatism, and finally, Neo-Realism. The thinkers dealt with under these heads are expounded relatively untechnically, and only their main positions are discussed. In this historical aspect, the book should prove a useful introduction to the philosophical tendencies of the nineteenth century. Beyond this, it has little value.

The author states in his preface that he is not in harmony with the thought he is expounding, and that his work is "frankly propaganda." The doctrine he wishes to spread is that the business of philosophy is to clarify, to harmonize, and in the end to justify common beliefs. His dissatisfaction with the nineteenth century is due to the fact that it thought too much—a strange attitude for a philosopher. In a pedestrian way, he is impatient with logic, and refers for the solution of his problems to "common sense" and the "plain man"; and this means the death of all serious thought. For the "plain man" is an irrelevance in philosophy. Appeal to him and "common sense" means that the judgments of those who have thought about a problem are to be deferred to the judgments of those who have not. And as for common beliefs, which are they? At any rate, many popular beliefs have been determined by primitive and unreflective thought; and if we do not expect from a savage a correct science, why look to him for a philosophy or a religion?

B.M.

THE HUMAN INSTINCTS IN BUSINESS.

By A. B. FITT, M.A., Ph.D.

Lothian Book Publishing Co., 1922. **Our copy from the Publishers.**

Even in Australia the trend of psychology is undoubtedly towards the applied side, for the only two recent works bearing on the science have both treated of the applications of psychology to industry and business. The first was Muscio's "Industrial Psychology"; the second, a new work by Dr. A. B. Fitt, of Auckland, is styled "The Human Instincts in Business." This little work treats of the human instincts, mainly in relation to problems of employment and of buying and selling. It contains the material of a series of lectures delivered to a group of Melbourne business people, who evidently had little or no previous acquaintance with psychology. The motive was to get these people to realise the value of "the psychological approach" to business problems. The book is clearly written, and serves its purpose. It should interest the average business man who has heard of "psychology," and wishes to focus his vague and indefinite ideas by an introduction to the science. It might also serve as a text book in University Tutorial Classes, wherever the teaching tends to bear upon such problems.

A.H.M.

TEACHING TO THINK.

By JULIUS BORASS, New York, The Macmillan Co., 1922.

(Our copy from Messrs. Angus & Robertson.)

The author has succeeded in combining, without loss of balance, the exposition of sound scientific principles with a profusion of concrete illustration and practical recommendation. The author early pays the usual homage to Socrates, and says: "We need a Socrates in every schoolroom; a teacher who can stimulate and guide his pupils to think honestly, persistently and effectively about the important problems of life." And he goes a long way himself towards showing teachers how this is to be done.

His reply to those, like Thorndike, who drew attention to the undoubted fact that there are many more learners than thinkers, that a few individuals do the thinking for the rest, is that "the reason why so few of us do our own thinking may be "that the schools never seriously attempted to teach us to think for ourselves."

He thinks that "real thought exercises are extremely rare in ordinary school-work . . . the thinking is mostly done by the teacher." Analysing a large number of examination questions set by the High School Board of Minnesota, over the period from 1899 to 1915, he found that while 75 per cent. were purely memory questions, only one per cent. of the questions unequivocally required thought. A similar investigation into examinations for teachers' certificates revealed the same state of things: and these results were confirmed by other observers. The author quotes one authority as saying: "All teaching which does not stimulate real and careful thinking makes for stupidity." It really seems, therefore, that our pupils run the risk of being injured rather than benefited. We tend to produce minds with obstinate prejudices, so often disguised under the name of conscience or party loyalty. Such minds are closed against all considerations which oppose the beliefs they hold.

The writer made more than three thousand visits to schools and classes in rural, graded and high schools, as well as in colleges and universities, yet he never witnessed what might be called a judgment lesson, a lesson in which the aim is to train the pupils to judge correctly by having them make comparisons, determine relative importance of values, weigh evidence, or test inferences and conclusions regarding things, persons, situations, or ideas. The author, however, is not content with destructive criticism, but describes in detail specific classes of judgment to be trained, with numerous helpful illustrations.

There follow chapters on "The Development of Co-operative Thinking," "The Value of Thinking as Others Think," "The Development of Initiative in Thinking," "The Development of Imaginative Thinking," "The Solution of Everyday Problems," and on "The Development of Skill in Problem-solving."

This book is written with insight and sympathy. But the best thing about it is perhaps that there is no mention of psycho-analysis.

H.T.L.

JOURNALS RECEIVED.

The Medical Journal of Australia: Sydney. Published weekly, 1/-. Maintains its high character as a professional and scientific record. Many of the articles and reports are of interest to students of logic and psychology. University lecturers, who are tired of the stereotyped and abstract examples of inductive and deductive methods of science, as given in text books, might profitably direct their own attention and that of their students to the accounts of actual scientific processes of observation and verification as described in the Medical Journal.

World Peace: Urunachal Mission, Calcutta. Published weekly, price 2 annas. Combines mystic aspiration and altruistic sentiment with propaganda in favour of a cosmic economic state, a "central world organisation" which would "co-ordinate the needs and productions of one country with the needs and productions of other countries," and be responsible for "the needs of every individual wherever he may be."

NOTES AND NEWS.

The Philosophical Department of Melbourne University has suffered a severe loss through the appointment of Dr. McKellar Stewart to the Chair of Philosophy vacated at Adelaide University by Professor Mitchell. The latter has left a record of highly successful work as teacher and author, as well as University administrator. Adelaide University is to be congratulated on the new appointment. Professor McKellar Stewart had a strong and healthy influence on University student life generally, besides being an accomplished lecturer. His book on Bergson's Philosophy is well known to philosophical students.

Melbourne University has had, for some years, an active Philosophical Society. About half the membership consists of graduates in Philosophy. During the past year papers have been read on "The Logic and Phenomenology of Husserl" (Boyce Gibson), "Sentiments and Complexes" (McKellar Stewart), "Psychological Reality" (Elton Mayo), "Mental Anthropology and the Psychology of Religion" (Pitt Rivers). The Society has also discussed such subjects as "The Problem of the Group in the Modern State," and "Intellect and Intuition." The aim of the Society is "to foster the systematic study of Philosophy, as to its historic development, its methods and problems."

J. A. Gunn, M.A., Ph.D., has been appointed Director of Tutorial Classes in Melbourne University, in succession to Mr. Meredith Atkinson. Dr. Gunn was awarded his Doctor's Degree at Paris, on the recommendation of Bergson. He had previously written a Thesis on Bergson and his Philosophy for his M.A. Degree in Philosophy at Liverpool University. He has had considerable experience as a lecturer on Psychology and Economics. He has also seen two years' war service.

S. C. Lazarus, M.A., a distinguished Graduate of Melbourne University, with First-class Honours in Philosophy, who afterwards went to Balliol College as Rhodes Scholar, has been appointed Lecturer in Philosophy at the University of North Wales.

We grieve to record the premature death of Elizabeth Jackson, Tutor in Philosophy at Adelaide University, and local correspondent of the Journal of Psychology and Philosophy. Miss Jackson had a real philosophical capacity and many interests, cultural and humanitarian.

Under the Mental Deficiency Act the Tasmanian Government has established a State Psychological Clinic for the diagnosis of mental deficiency, the classification of defective and other children, the instruction of teachers, and the study of mental deficiency. An examining authority consists of a medical practitioner and a psychologist approved by the Mental Deficiency Board, and the examination in each case comprises an investigation into the physical, psychological, educational, and social conditions of the child or adult. The University of Tasmania has direct representation on the Board, and the Clinic will be utilised for some of the practical work of the Department of Psychology of the University. Professor Morris Miller has been appointed Director of the Clinic.

The Pitt-Cobbett Lectureship in Economics, newly founded in the University of Tasmania, will to some extent be concerned with the human factor in business, and some phases of industrial psychology will be included in the details of subjects under the control of the lecturer, Mr. J. B. Brigden, B.A.

I. L. G. Sutherland, M.A. (Victoria University College), post-graduate scholar in Arts of the University of New Zealand, who was working under the direction of the late Sir Henry Jones in the Department of Philosophy of the Glasgow University, has now gone to the University of London, and will continue his studies there under Professor L. T. Hobhouse.

H. Miller, M.A. (Victoria University College), New Zealand Rhodes Scholar, is in residence at Balliol College, Oxford, where he is studying Social Philosophy.

The Rev. L. G. Whithead, a graduate of Canterbury College, with First-class Honours in Philosophy, has been appointed External Examiner in Philosophy in the University of New Zealand.

A. K. Rule, another Canterbury Honour graduate, after a distinguished course at Princeton University, acted for some time as Professor of Philosophy in one of the smaller American Colleges, and is now doing post-graduate work at Edinburgh University.

Mr. H. C. Beecroft, B.A., of Auckland University College, was awarded the Senior University Scholarship in Philosophy, tenable during 1922.

Mr. A. B. Fitt, M.A., Ph.D., Lecturer in Education in Auckland University College, has recently published "The Human Instincts in Business" (Lothian, Melbourne and Sydney). The book is based on a course of lectures delivered by Dr. Fitt in Melbourne in 1918. (See book reviews).

Professor Salmond, Canterbury College, N.Z., writes, in wishing success to the Australasian Journal and Association of Psychology and Philosophy:—"The interest in philosophy in New Zealand has greatly deepened and extended of recent years. Many have felt the need of a nearer market for their work than that offered by the British Journals of Philosophy. It is possible also that the Journal may disclose a new kind and temper of philosophy under these southern skies. Otago University, almost from its beginning, had a Chair of Philosophy, endowed, however, by the Presbyterian Church. Canterbury College was founded many years before any provision whatever was made for the study, and it was not until 1901 that a small lectureship was established there, the provisions being that by means of two hours lecturing per week, students should be prepared for the whole of the work in philosophy for both Pass and Honour Degrees. Victoria University College followed a year or two later, by founding a lectureship in Economics and Philosophy, and in Auckland, later still, Philosophy was put under the charge of a lecturer, as one of half a dozen subjects, of which he must have an adequate knowledge. All this farcical business is now, however, a thing of the past, and all four colleges have Chairs of Philosophy, though provision for adequate assistance is still far to seek. Experimental Psychology was first introduced at Victoria University College. Auckland followed some years later. Canterbury is about to set up a laboratory. Otago, the first to start, here lags behind. Is this, dare it be asked, folly or wisdom on the part of Otago? As long as Psychology remains in our University curricula merely a sub-branch of Philosophy, is it right that Experimental Philosophy should occupy much of the students', not to speak of the Professor's time?"

Sydney University has the largest, though not the oldest Department of Philosophy in Australasia. It began in 1888, with eight students and one lecturer, who soon afterwards was appointed first

Challis Professor of Philosophy. When the Professor retired in 1922, there were considerably over 500 students of Philosophy in actual attendance. In recent years, the psychological classes have become so large that Psychology is now a conjoint department, with a separate curriculum and teaching staff. Ten years ago there was only a partial course of 30 lectures on Psychology, and this part course could only be delivered in the evening once every three years. Now there is a complete elementary course which is given every year in the evening as well as to day classes. In addition to this complete elementary course there has been introduced a complete second-year course dealing with recent developments in Psychology. It includes lectures on abnormal psychology, measurement of intelligence, mental deficiency, and the relation of these to social psychology. This course is given late in the afternoon, so that evening students also may attend. A laboratory has been provided with a good equipment, and candidates for Distinction in the first year are required to attend in the laboratory for an introductory course in experimental psychology. Students of the second-year course are also required to do practical work, but this is done in selected schools placed at their disposal by the Director of Education.

Furthermore, the Senate of the University has recently agreed to the institution of a third-year course in Psychology to deal wth the subject of advanced experimental psychology. If funds for a student-demonstratorship are provided, this new course will begin in March, 1923.

The following table records the increase in attendance since 1918:

FIRST YEAR	1918	1919	1920	1921	1922
Day	100	160	207	224	182
Evening.	47	96	98	112	85
SECOND YEAR	—	22	42	50	64
Totals	147	278	347	386	331

Finally, the increase in students has required an increase in staff. This requirement was met in 1921 by the appointment of Dr. A. H. Martin, a graduate and scholar of Sydney University, and Ph.D. of Columbia University, New York, as Lecturer in Psychology, the previous lecturer having been appointed Associate Professor of Psychology under the McCaughy Bequest.

THE

Australasian Association of Psychology and Philosophy

OFFICERS FOR 1923.

President: Professor B. Muscio, M.A.

Vice-Presidents: Professor W. R. Boyce Gibson, M.A., D.Sc.; Professor T. A. Hunter, M.A., M.Sc.; Associate-Professor H. T. Lovell, M.A., Ph.D.; Professor E. Mayo, M.A.; Professor W. Mitchell, M.A., D.Sc.

Hon. General Secretary: A. H. Martin, M.A., Ph.D.

Hon. Business Secretary: S. C. Ratcliff, B.A.

Hon. Treasurer: G. D. Milford, M.A.

Hon. Counsel: C. M. Collins, B.A., LL.B.

OBJECT. The Association has been formed for the purpose of promoting, in such ways as are possible to an Association of this kind, the study of and research in psychology and philosophy in all their branches. It represents a co-operative movement of the departments of philosophy and psychology in all the Universities of Australia and New Zealand, and is thus genuinely Australasian.

JOURNAL. The first step of the Association has been the inauguration of **The Australasian Journal of Psychology and Philosophy**, of which this is the first number. **This Journal** will constitute a local medium for the discussion of all questions relating to psychology, philosophy, and social science.

MONOGRAPHS. The Association proposes further to issue from time to time monographs on special subjects. Two have already been published, namely:—

No. 1. **Liberty, Fraternity, Equality,** by Professor Francis Anderson, M.A.
No. 2. **Dreams,** by Associate-Professor H. T. Lovell, M.A., Ph.D.

GENERAL MEETINGS. A general meeting of the members of the Association will be held once a year for the presentation and discussion of papers. In so far as is practicable, such general meetings will in future be held successively in the various capital cities throughout Australasia. The first general meeting will take place in Sydney on May 19, 1923. The subject for discussion will be **Psycho-analysis,** and the following papers will be read:—

Psycho-analysis and Traditional Psychology: Professor H. T. Lovell, M.A., Ph.D.
Psycho-analysis and Education: Professor A. Mackie, M.A.
Psycho-analysis and Religion: Rev. M. Scott Fletcher, M.A., B.Litt.
Psycho-analysis and Medicine: R. A. Noble, M.B., Ch.M., D.P.M.

All members of the Association will receive notice of the hour and place of this meeting not later than April 29, 1923.

MEMBERSHIP OF THE ASSOCIATION. This is open to all persons interested in the objects of the Association and willing to promote them in such ways as they can. Membership subscription for 1923 (within Australasia) is 10/-. For this sum members receive **QUARTERLY The Australasian Journal of Psychology and Philosophy,** and may attend **FREE OF CHARGE** lectures or meetings for discussion arranged by the Association. Non-members may obtain the **Journal** through any newsagent in Australasia, or by post from the Hon. Business Secretary, for 3/- per copy.

Those interested in the Association are urged to become members of it. They will thus effectively strengthen the Association, and will moreover obtain the Journal, the only one of its kind in Australasia, on the most advantageous terms to themselves.

The subscription to the **Journal** abroad is 12/- per annum.

For all information, application should be made to

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Challis House, Martin Place, Sydney, N.S. Wales.

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